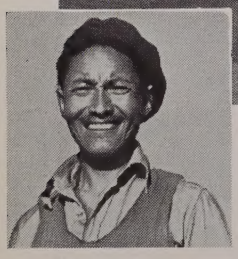
The JULY 1953 2/6

GEOGRAPHICAL MAGAZINE



Tensing Bhutia

Some of the members of the British Everest 1953 Expedition. Standing (*left to right*): **Dr. L. G. C. Pugh, Major C. G. Wylie, W. Noyce, G. C. Band, J. A. Jackson** (*reserve*), **M. Westmacott.** Seated (*left to right*): **Dr. R. C. Evans, Colonel John Hunt, T. D. Bourdillon, A. Gregory.** Members not in group photograph are: **Dr. M. Ward, G. Lowe** and **T. Stobart.**

Group photograph by a staff photographer of "The Times."

Edmund Hillary

Right at the Top

Our heartiest congratulations to the successful British Everest Expedition on their conquest of the world's highest peak. This year, as in the 1951 Reconnaissance Expedition, ILFORD HP3 & FP3 roll films; ILFORD HP3, FP3 & Pan F 35 mm. films; ILFORD Colour Film 'D' and ILFORD Advocate cameras were used by the climbers. We are proud to be associated with so magnificent an achievement.

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Explorers' Maps

I. The North-East Passage

by R. A. SKELTON

This is the first of a series of articles by the Superintendent of the Map Room at the British Museum which will present, in regional order, some episodes in the history of exploration for which the evidence of maps is specially interesting or accessible. The text is to be read as a commentary on the maps (some here reproduced for the first time) and not as a connected history of discovery

THE maps used or drawn by explorers describe the borderland between the known and the unknown. Their evidence may tell us what a traveller expected to find or what he in fact discovered. They may have the authority of a prophecy, of a prospectus, or of a chronicle. In early maps information derived from theory and from experience is often inextricably entangled, and for this very reason they are important documents in the history both of geographical ideas and of geographical discovery.

Although the recording of an itinerary or a journey is one of the oldest uses which maps have served, the systematic drawing of maps for this purpose does not begin before the 16th century. The practice of attaching a competent cartographer to an expedition of discovery was apparently learnt by the English from the Spaniards. Richard Hakluyt the lawyer, advising Sir Walter Raleigh on his Virginia colony of 1585, recommended that "a skilfull painter . . . be caried with you, which the Spaniards used commonly in all their discoueries to bring the descriptions of all beasts, birds, fishes, trees, townes, &c." The Privy Council's instructions to Captain Edward Fenton, setting out on a voyage to the East in 1582, required him to "give straight order to restraine, that none shall make any charts, or descriptions of the sayd voyage, but such as shall bee deputed by you the Generall." We know the names of some official surveyors who accompanied Eliza-

(Fig. 1) "The forme of a Mappe sent 1527 from Siuill in Spayne by maister Robert Thorne marchaunt" to Henry VIII's ambassador. Printed by Hakluyt in 1582 with an apology for its "imperfection", it was designed to emphasize the length of the Portuguese and Spanish sea routes to the Far East

All maps except two, from the British Museum

This circumpolar map (Fig. 2) was added to Mercator's Atlas in 1595. As in Mercator's world chart of 1569, the North Pole ("a very high and black rock") is ringed by four large islands. An open sea passage north of Asia rounds Cape Tabin in 80° N, beyond which two magnetic poles are marked, and issues in the Strait of Anian, dividing Asia and America. The two maps opposite were drawn to illustrate western routes into the South Sea, but they also reflect contemporary belief in a navigable passage to the north of Asia. The circular map, "Sir Humfray Gylbert knight his charte" (Fig. 3), probably prepared by Dee about 1582, reproduces Mercator's version of North Polar geography. The oval world map (Fig. 4) was published in 1578 with the report of Sir Martin Frobisher's voyages to the north-west

By courtesy of the Free Library, Philadelphia & the Royal Geographical Society

(Fig. 5) Part of Anthony Jenkinson's map of Russia dated 1562 and published by Ortelius in 1570. The map shows the interest in Russian trade aroused by Jenkinson's journeys to the Caspian Sea, Persia and Bokhara, and points, with graphic detail, to the possibility of land routes to Cathay

bethan expeditions. On Frobisher's second voyage for the North-West Passage, in 1577, James Beare is reported "to have drawne out the cards of the coast." Detailed instructions to one Thomas Bavin, who apparently sailed with Sir Humphrey Gilbert in 1582, order him to "drawe and sette downe the distinct places & countries by drawen plott as also by writing," and tell him what equipment to carry. The maps and drawings of John White are a vivid record of Raleigh's Virginia colony.

The magnet for exploration in the 16th century was the reputed wealth of Cathay and the Spice Islands: "the most richest londes and ilondes in the worlde, for all the gold, spices, aromatikes and pretiose stones . . . from thens thei come," as Roger Barlow wrote to King Henry VIII in 1541. When the English and Dutch entered the field of discovery, the southern sea-routes to the Far East were already claimed by Spain and Portugal. By the easterly route round the Cape of Good Hope the Portuguese had developed a sea-borne traffic with India and eastern Asia. Spanish ships had passed the Magellan Strait and crossed the Pacific, and the main Spanish trade route was established across the Isthmus of Panama. The continuity of the American coast from the St Lawrence to the Magellan Strait had been disclosed by repeated searches for an easier channel into the South Sea. The younger seafaring nations who aspired to a share in Eastern trade had to seek a route into the Pacific by a portage or strait across North America, or by navigable passages to the north of the two continents which barred the way to the Far East. Even in the Virginia

(Above) (*Fig. 6*) *William Borough's "sayling plat" with notes on navigation, drawn about 1570, depicting the Muscovy Company's annual route by North Cape and "Ward hows" (Vardö) to "St Nicholas" (Archangel) and the channel to the south of Novaya Zemlya by which he entered the Kara Sea in 1557.* (Below) (*Fig. 7*) *An English chart of the same coasts, with Barents's discoveries of 1596 (cf. Fig. 9)*

colony of 1607, the first permanent English settlement in the New World, the prospect of "a certaintie of the South Sea" had not been abandoned; but it was to the search for northern passages that the main effort of English and Dutch seamen was directed. "There is one way to discouer, which is into the North," wrote Robert Thorne in 1527, "for out of Spaine they have discouered all the Indies and Seas Occidentall, and out of Portingall all the Indies and Seas Orientall."

Thorne and his friend Roger Barlow, English merchants trading in Seville, both prepared projects urging on King Henry VIII "this waie of the northe" and "the commodity and vtilitie of this Nauigation." Thorne's letter was addressed to the King in 1527, and his "book and card of the viage to Cataia" came into the hands of Dr John Dee fifty years later. The letter was first printed by Richard Hakluyt in 1582 as propaganda for the North-West Passage, with a somewhat edited woodcut reproduction of Thorne's "little Mappe or Carde of the world" (Fig. 1).

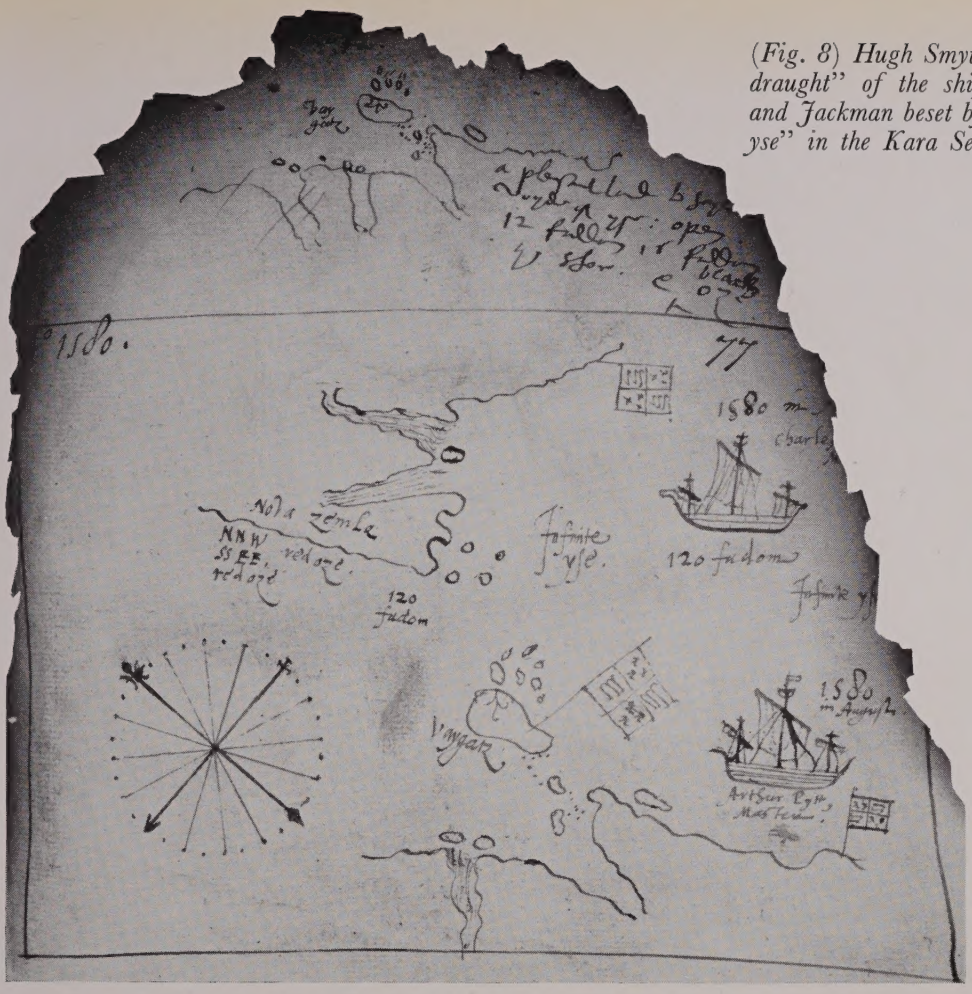
The geographical conditions for the "waie of the northe" were a navigable passage to the north of Asia or America and the existence of a strait dividing the two continents. Thorne boldly asserted his opinion that "there is no land vnhabitable, nor Sea innauigable", and was himself willing "to attempt, if our Seas Northward be nauigable to the Pole, or no". Armchair geographers of the 16th century held conflicting views, derived from theoretical reasoning, from the authority of ancient writers, or from their interpretation of explorers' reports, about the relationship between the supposed Polar lands and the continents of Asia and America. By the second half of the century (Figs. 2–4) it was generally agreed that no land bridge connected north-east Asia with north-west America and that the Polar lands were divided by sea from both continents; and debate turned on the question whether the north-east or the north-west offered the easier or more "commodious" passage.

It is not surprising that Polar geography was the subject of active speculation, for in the 16th century (as today) national interests hung upon the answer. To those Englishmen who, like Thorne, studied geography from a globe it was plain that "sayling Northward and passing the Pole . . . it should be a much shorter way [to the Spice Islands], than either the Spaniards or the Portingals haue." Maps drawn on a polar projection (e.g. Figs. 3, 7) drove this point home. Countries in high latitudes would also offer a better market for woollen cloth, the staple English export, than tropical lands. Both these arguments were urged by Thorne, and they were echoed 150 years later (as we shall see) by a later English adventurer for the North-East Passage.

Of the alternative routes offered by Thorne, that to the north-east was the scene of the first English ventures. This choice was supported by the judgment of geographers, notably Richard Eden and the fertile Dr Dee. The route was known as far as "Wardhouse" (Vardö, in Finnmark), and it was believed to have been navigated to the mouth of the River Ob. Further east, the mapmakers placed "Cape Tabin", laid down by Ptolemy in 80° N latitude. From this point the coast of "Cathay" was conjectured to fall away in a south-easterly direction to the hypothetical strait between Asia and America, which came to be known as the Strait of Anian (Figs. 2, 4). On such slenderly based arguments, as Professor Taylor remarks, were men prepared to hazard their lives.

The first English expedition, under Sir Hugh Willoughby and Eden's friend Richard Chancellor, sailed in 1553. Two ships "wintred in Lappia, where Sir Hugh Willoughby and all his companie died, being frozen to death." Chancellor, in the third ship, reached the White Sea, whence he travelled overland to Moscow. This voyage convinced its promoters "yᵗ Norway & Lapland &c. are conioyned not to Groneland, or any part of yᵉ Northern regions as one firme continent, but by sea a man might trauel to yᵉ country of Moscovia . . . as far as the gret river Obby." In 1555 a second expedition, under Chancellor, opened up trade relations with Russia, which were established by the missions of Anthony Jenkinson in 1557–9 and 1561–4 on behalf of the newly founded Muscovy Company (Fig. 5). Meanwhile in 1556–7 Stephen Borough and his brother William (then sixteen years old) had in the pinnace *Spendthrift* boldly penetrated to Vaygach Island ("Waygats"), south of Novaya Zemlya, and through the Kara Strait (or Burrough Strait) into the Kara Sea before being turned back by ice (Fig. 6). Further enterprise in this direction was checked by the expectation of richer profits from the Russia trade and by increasing interest in the north-west route.

That belief in a sea-passage to the north of Asia was still lively is shown by William Borough's "entire sayling plat that we use for those parts" (Fig. 6) and by George Best's world map of 1578 (Fig. 4); and as late as 1580 Mercator could assert to Richard Hakluyt that "the voyage to Cathaio by the East



(Fig. 8) Hugh Smyth's "little draught" of the ships of Pet and Jackman beset by "infinite yse" in the Kara Sea in 1580

is doutlesse verie easie and short" (Fig. 2). These hopes were sustained by Dee's zealous advocacy and by Borough's "continuall practise in the voyages made yeerely" to Russia by sea. Borough and Dee drew up the instructions for William Pet and Charles Jackman, masters of the two ships sent out by the Muscovy Company in 1580 to search for the passage. A sailing time of thirty-six days was allowed to "the Promontory Tabin", whence the land was forecast to run south and east. The ships passed through the Kara Strait, north of Vaygach, or perhaps through the Yugor Strait (also known as Pet's Strait), south of the island, into the Kara Sea, where they were beset by "infinite yse", and on the return Jackman's ship was lost without trace. To the manuscript journal of the voyage brought back by Pet is attached a chart (Fig. 8), showing the ships in the Kara Sea. Drawn by one of Pet's company, as we learn from a note in Dee's handwriting ("Hugh Smyth did enform me by mouth and made a little draught with his own hand of this place and there aboutes anno 1582"), this sketch graphically suggests both the fortitude of the Elizabethan seamen and their inevitable failure to pierce the shallow and ice-packed coastal waters to which they clung.

The running was now taken up by the Dutch, whose interest in opening a northern passage to the Far East was no less than that of the English. Two expeditions were sent out in 1594. An Amsterdam ship, commanded by Willem Barents, sought the passage to the north of Novaya Zemlya and navigated its west coast as far as 77° N. The merchants of Zeeland, advised by Hakluyt, preferred the channel south of Novaya Zemlya followed by the English voyagers, and their ships passed through the Yugor Strait into the Kara Sea. In 1595 a combined expedition, with Barents as chief pilot, failed to penetrate the ice in Yugor Strait. Two ships sailed from

(Fig. 9) Map of the North Polar regions made in 1598 from the charts of Willem Barents showing the route of the Dutch ships in 1596, resulting in the discovery of Spitsbergen—

—(Het nieuwe land), and that of Barents's ship to winter quarters on Novaya Zemlya. Mercator's Polar islands have vanished and many whales suggest commercial possibilities

Amsterdam in the following year, again with Barents as chief pilot. Their course is marked on Barents's map of the three voyages (Fig. 9) and on Gerrit de Veer's map (Fig. 10), both engraved in 1598; and a contemporary English chart (Fig. 7) also records their discoveries. Sailing on a more westerly course, they discovered Bear Island ("T'veere Eylandt") and Spitsbergen ("Het nieuwe land"). After the ships had separated, Barents coasted Novaya Zemlya and rounded its north-east cape to a bay where his ship was frozen in. Here the crew constructed a hut for their winter quarters ("het behouden Huys" in Fig. 10). They were the first party

(Left) (*Fig. 10*) *Part of Gerrit de Veer's chart of 1598, showing Barents's ship in the ice, the hut built for wintering in 1596–7, and the return by open boat.* (Below) (*Fig. 11*) *Joseph Moxon's map of the North-East Passage published in 1675. The passage south of Novaya Zemlya is now represented as a gulf* ("*Sinus Dul*[*c*]*is*"), *but the sea to the north was thought to be open*

of Europeans to survive an Arctic winter. On the return voyage in open boats to the Kola Peninsula in the following summer Barents died of scurvy. His hut, built of fir-wood planks, was found by a Norwegian ship in 1871. Among the relics left by Barents's crew in 1597 and recovered in 1875 was a Dutch translation of the journal of the voyage made by Pet and Jackman in 1580, no doubt furnished by Hakluyt.

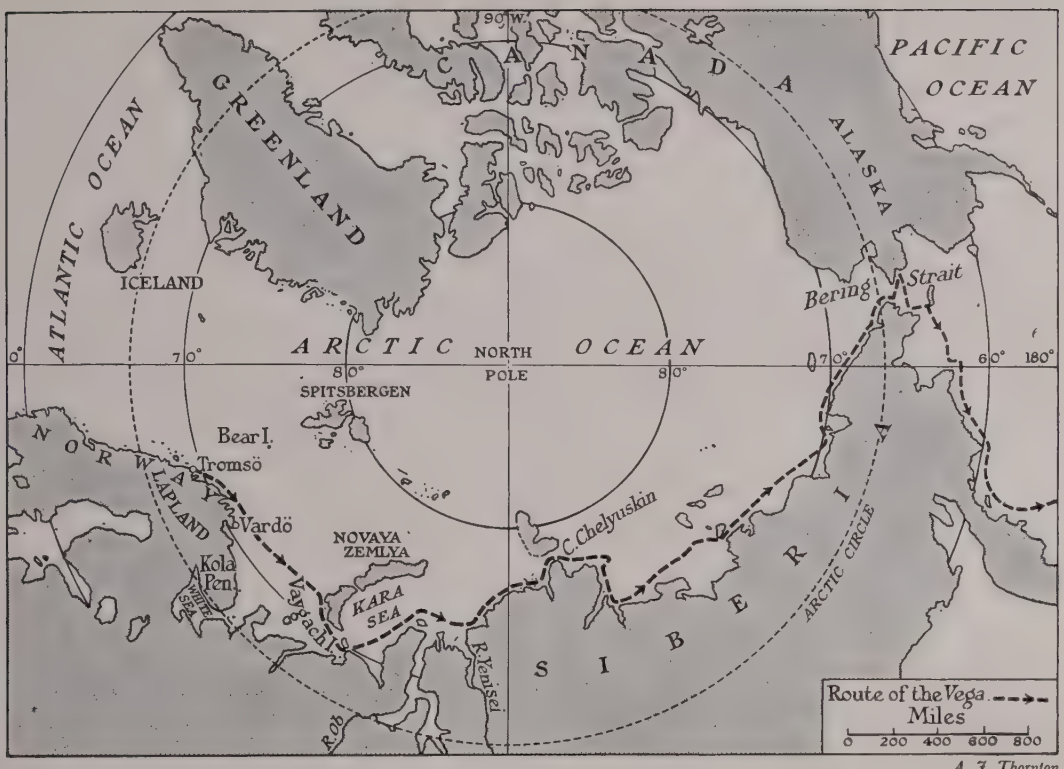
Henry Hudson, leading Dutch expeditions in 1605–7, found no way through the ice to the east and west of Spitsbergen, and further search for the North-East Passage was discouraged for half a century, although the Dutch whalers who frequented the northern seas brought back reports of open sea to the north and east of Novaya Zemlya. In 1675 speculation on the north-east route was revived by rumours which reached England from Holland. Joseph Moxon, whose map (Fig. 11) shows the supposed geography of the passage, told a curious story in a paper to the Royal Society. Twenty-two years earlier, he recalled, he had met, in an Amsterdam beerhouse, a seaman from the Greenland fleet, who reported that the Dutch ships "had sailed two degrees beyond the pole", without meet-

(Figs. 12, 13) Details from a map of Siberia "made by order of Capt. Commander Bering Ao: 1729", now in King George III's collection in the British Museum. In accordance with instructions drawn up by Peter the Great, Vitus Bering's first expedition left St Petersburg in 1725, crossed Siberia by land, constructed a boat in Kamchatka, and sailed north to determine whether a land connection existed between Asia and America. The vignette (left) *illustrates the habits of the Siberian tribes observed by Bering. The detail of the boat voyage* (above) *shows a line of soundings to about 67° N, where Bering decided that "our task had been carried out and that the land did not extend farther north". His observations of magnetic variation are also marked*

ing land or ice. "I asked him," wrote Moxon, "what weather they had there? He told me fine warm weather, such as was at Amsterdam in the summer time." By such "Arguments and Reasons", flimsy as they must seem to us, Captain John Wood was persuaded of the "Possibility of a Passage to ye Northward of Nova Zembla to China and Japan." He defined the advantages of the discovery in terms similar to Thorne's: the north-east offered the shortest route, involving a mere six weeks' voyage to Japan, and a market in Tartary for English cloth, "wch now is a great Drugg". Wood's project was supported by King Charles II and the Duke of York, for whom he "drew a Polar Draught", and in May 1676 he sailed with two ships, the frigate *Speedwell* and the pink *Prosperous*. His voyage was a fiasco, the *Speedwell* being wrecked on the west coast of Novaya Zemlya. Wood drew the ungenerous conclusion that his predecessors in discovery had misled him and that Novaya Zemlya and Spitsbergen "are the same Continent".

Meanwhile the eastern end of the passage had been discovered. Russian expeditions by land had explored the northern coastline of Siberia, and in 1648 the Cossack Deshnev sailed round the north-east point of Asia. The great Russian expeditions sent out under Vitus Bering (1725–9 and 1734–43) were designed to investigate the strait supposed to lie between Asia and America. Its existence was not proved beyond doubt, but Bering himself was convinced (Figs. 12, 13), and from 1754 the strait has borne his name. In 1778 Cook navigated it to 70° N in search of a passage from the Pacific to the Atlantic by

(Fig. 14) Captain Phipps's ships locked in the ice. The inset (Fig. 15) is taken from a "Plan of the Bay in which the Racehorse *and* Carcass *were inclosed by the ice from July 31 to August 10, 1773. Latitude . . . 80° 37'. Drawn by Phillip D'Auvergne, Midshipman on board the* Race-Horse"



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the north of Asia or of America.

The last English venture for the passage reverted to Thorne's alternative route directly across the Polar region. In 1773, on the proposal of the Royal Society, the Admiralty despatched two ships, the *Racehorse* and the *Carcass,* selected for their strength of construction, "for the purpose of trying how far navigation might be practicable towards the north pole." The expedition was commanded by Captain C. J. Phipps, and Horatio Nelson served as a midshipman in the *Carcass.* Phipps was unlucky in meeting unfavourable ice conditions. North of Spitsbergen he was checked by ice in 81° 37′ N, and on working to the east he found only a "wall of ice, extending for more than twenty degrees between the latitudes of eighty and eighty-one" (Figs. 14, 15).

Of the northern passages proposed by Thorne, that by the north-east was, at the beginning of the 19th century, considered to be the most discouraging; yet it was the first to be navigated throughout in a single vessel. A century after Cook, the experience of Russian and Scandinavian expeditions by sea and land had convinced the Swedish scientist A. E. Nordenskiöld "that the open navigable water which two years in succession [1875 and 1876] had carried me across the Kara Sea . . . to the mouth of the Yenisei, extended in all probability as far as Behring's Straits, and that a circumnavigation of the old world was thus within the bounds of possibility." Nordenskiöld's ship the *Vega* sailed from Tromsö on July 21, 1878 and, passing through the Yugor Strait, rounded Cape Chelyuskin on August 19 and wintered in 173° E longitude, 120 miles from East Cape. In the summer of 1879 she passed through Bering Strait into the Pacific Ocean.

In 1914–15 the North-East Passage was navigated in the reverse direction, from east to west, by Russian ships, and in 1932 a Soviet ice-breaker made the first passage in a single season between the White Sea and the Pacific. By 1939 the northern sea route had been opened to commercial traffic, and in that year eleven vessels completed the passage which for over three centuries defied the efforts of European voyagers. Today the ice-breakers of the Soviet Union keep the sea lanes open for the summer convoys between the harbours of Northern Russia, the river estuaries giving access to the interior of Asia, and the Pacific ports. Thus the 16th-century dream of a commercial "waie of the northe" to the Far East has been realized.

The High Commission Territories in South Africa

II. Basutoland

by SIR JOHN HOULTON

Photographs by the author

The government and people of the United Kingdom are directly responsible for three territories adjacent to the Union of South Africa. Discussion of their future has to be conducted in terms not only of their political status but also of their actual situation and needs. These, in each territory, are the subject of an article (of which the first was published in our June number) by Sir John Houlton who, after a distinguished career in the Indian Civil Service, visited all three

I WAS motoring through Zululand when I saw near the road a monument erected by a new generation of Africans to one of the great despots and slaughterers of mankind, the Zulu Chaka. Now he is on his way to becoming a national hero, so short are human memories. His tribe belonged to that widespread group of peoples known as the Bantu. This mixed race, partly Negro and partly Hamite (some of the tribes have also an admixture of Arab blood) was on the move southwards down the continent when the first Portuguese explorers were making their way up the east coast of Africa.

Chaka began to make his presence known to the outside world in the early years of the 19th century. He led his armies, trained under the most savage discipline, against neighbouring tribes and massacred and destroyed until all the people around were flying from the terror like widening circles in a pond. Some of the fleeing tribes fell on the people in their path, and some of Chaka's own people, like those who took the name of Matabele, broke away in fear for their lives and started to loot and slaughter on their own.

Travelling inland from the Natal coast, away from the country where the Zulu power grew up, you see on the horizon the broken outline of a great mountain system, the Drakensberg. It was in the western foothills of this region, during the worst of the fighting set in motion by Chaka, that a young chief named Moshesh rallied the remnants of the Basuto clans. He beat off the invading

tribes, but soon had to face a greater threat—the northward and eastward trekking white men. After many years of conflict, cattle-raiding and often open war, during which Moshesh managed to hold his own against attacks and punitive expeditions by Boers and British forces, Basutoland still survived, though shorn of much of its best land. At last, after repeated requests by Moshesh, the British government annexed the country—it is a British colony, not a protectorate—and declared the Basuto British subjects. Moshesh sent a message to Queen Victoria: "My country is your blanket and my people are the lice in it."

Basutoland contains some of the most beautiful scenery in southern Africa. Most of it is mountainous, the main ranges being around 10,000 feet, with several peaks over 11,000, and none of it is below 5000 feet. One of the sights in the mountains is the great Maletsunyane waterfall, where the river pitches over a vertical cliff, to drop 630 feet into a gorge. In the spring and summer the mountain slopes are a mass of wild gladioli, flaming red and pink, agapanthus and many other flowers. The high ranges are often covered with snow for weeks on end. On the grassy slopes great numbers of cattle live for most of the year, tended by boy herdsmen who shelter from the bitter cold in tiny stone huts. For a short time in winter the cattle are brought down to the villages where their owners live, but there is little grazing on these crowded lower slopes and no fodder in store, so the return to the mountains must start as soon as the passes are open.

The Basuto are a race of mounted men (the women usually have to walk) and their ponies are a fine stocky breed, many of them showing Arab blood. They sold 12,000 of them to the British army during the Boer War. Both men and women wear gaily coloured blankets, but good ones are expensive now, and they can no longer get the favourite "Victoria" type formerly made in England. The Basuto will go short of many things to buy a good blanket; for a time during the war they could only get the grey army kind, and one old man was heard to say: "They have made us look like donkeys."

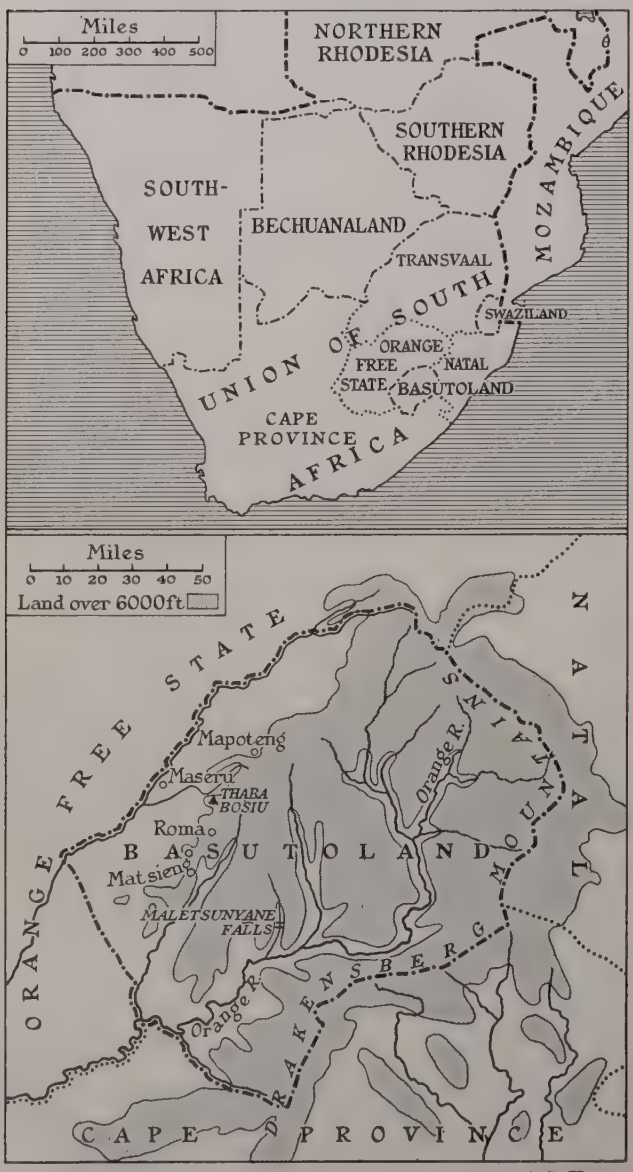
The huts with their conical thatched roofs

Looking over Basutoland from Thaba Bosiu, the "Mountain of Night"; one of the plateaux girt with sandstone cliffs which form natural strongholds. On it is the tomb of Moshesh, the national hero

and the outer walls often coloured with red or yellow ochre are most picturesque. The interiors are always kept spotlessly clean and the inside walls are decorated with colourful designs which often bring in the V and the crown, proof of the great affection of the people for the memory of Queen Victoria.

There are over half a million people in Basutoland, and most of them live in the 4000 or so square miles of foothills and lowlands, though of recent years many people have moved up into the mountain valleys and settled there. The country is economically poor, with no industries or minerals of any value, and the people must depend for their livelihood on pasture and agriculture, or on earnings in the Union. Very little of the ground is level, and bad and primitive methods of cultivation and overgrazing have led to wholesale soil erosion. Large areas could no longer be cultivated because there was no depth of soil left. While the population went on increasing the soil on which their life depended was draining away into the Orange River.

The work of meeting this grave menace was started seventeen years ago and has gone on with increasing momentum ever since, as it became clear that it was a race against time. The British government gave a very generous grant towards it. The task of the officers engaged on it has been nothing short of heroic; they had to undertake the protection, by contour banks and ditches, water channels and grass strips, of almost all the arable land in a country the size of Belgium, and they are succeeding. The area already protected by these means exceeds a thousand square miles. They are also vigorously tackling the equally vital task of saving and improving the vast expanses of pasture land in the mountains.



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I motored and walked over much of the foothill and lowland country, and everywhere I saw the hillsides marked by the wavy lines of the terraces and grass strips. In some places the strips stand out as belts of many-coloured flowers—the wild cosmos. After the government teams have done their job it must be left to the cultivator to maintain the anti-erosion works on his land; it remains to be seen how well he will carry out his task.

Before the problems of poor cultivation and misuse of soil can be solved I believe it will be necessary to get down to the root causes, and the most important of these is a bad land-tenure system. It was no doubt very suitable when there was plenty of land and the population was small, but it has outlived its usefulness. The pasturage on a man's fields belongs to the community, so that after he has harvested his crop all his neighbours

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A scene in Basutoland near the fine hospital run by Seventh Day Adventist Missionaries at Mapoteng. The picture gives a good idea of the wide and populous valleys which are characteristic of the less mountainous parts of the country. In the foreground is a group of Basutos on their well-built ponies. The distant mountains are an offshoot of the Drakensberg range

Ektachrome

(Above) *Modern houses and traditional huts side by side in Matsieng, the village of the Paramount Chieftainess, the regent.* (Below) *The effect of soil erosion and gully formation: for many years an increasingly grave problem in Basutoland, but one which is being vigorously tackled by the government*

Ektachrome

(Right) *Women and girls outside the Roman Catholic church at Roma in Basutoland. Many of the people come a long way to attend the services and spend the whole of Sunday in the church or its precincts*

Ektachrome

Ektachrome

(Left) *A party of Basutos known as "Bale" girls, on their way to a retreat where they will take part in rites of initiation under the tutelage of an older woman. The girls, who are dressed in skins and woven grass with caps and fringes of brightly coloured beads, generally have their bodies whitened. Little is known about the initiation practices, but some of the instruction received appears to deal with domestic matters such as cooking and household management*

can drive their cattle onto his land to eat the straw. A man cannot even fence his land. Then there is hardly any wood in the country. I saw poor women buying from the trading store a few pennyworth of firewood, imported from the Union. Theoretically a man now has rights in a tree which he plants, but the chief used to claim all trees and the average cultivator distrusts his chief in this matter, sometimes with good reason.

Nearly 60,000 Basuto men are always away at work in the Union, most of them in the mines. While they are away their land suffers —the work may be beyond the powers of wife and children unless they can get help. One of the great evils is venereal disease, for which life in the mining areas used to be blamed, and deficiency diseases like pellagra are common. In the fight against disease wonderful work is being done by mission hospitals. Magic and witchcraft still play a part in the life of the people, although the majority, including the regent and the heir and many of the chiefs, have been made converts by the various Christian missions. The terrible "ritual" (more properly "medicine") murders have by no means died out.

Up in the mountains the soil is volcanic and yields good crops of wheat; in the lower portions the land is given over almost entirely to maize and kaffir-corn. Prominent features of the landscape are the flat-topped sandstone hills with vertical sides, often overhanging near the top, where the softer strata below the hard sandstone have weathered. Other striking features are the ironstone dykes, some of which can be followed for miles across country. Where one of them crosses a sandstone hill it forms a track up the hillside and is often the only means of access to the top. These geological peculiarities have affected the course of history in this part of Africa— they may indeed be said to be responsible for the survival of the Basuto nation. The plateau with its precipitous sides formed an admirable refuge for a hard-pressed clan, and when the cattle had been driven up and the path blocked by boulders it formed an almost impregnable fortress.

The most famous of these isolated plateaux is Thaba Bosiu, the "Mountain of Night". It was the stronghold of Moshesh throughout his many wars, and he held it against determined assaults by Matabele, Boer and British. His friend and counsellor the French protestant missionary Casalis lived here from time to time for many years. I climbed up the steep mountain slope by the stony dyke which affords a passage through the line of cliffs looming above. This was the place where most of the assaults were made; here the Matabele were hurled back and here the Boer general Wepener was killed. On the lonely plateau at the top are the graves of the chiefs, that of Moshesh a little apart from the others : a heap of rough stones on a wind-swept grassy height, and all around the valleys and blue mountains of Basutoland, the nation which he created. I have seen no finer memorial.

In an open cave under an overhanging cliff I saw an almost incredible sight. Standing out in relief on the flat rock-ceiling fifteen feet above my head were the huge footprints of dinosaurs. It appears that the underlying rock, once soft earth or mud on which the creatures walked millions of years ago, had fallen away in a clean break, leaving the upper sandstone, formed from wind-blown sand which had filled in the depressions, with perfect casts of the footprints.

On the walls of caves and in sheltered spots are found some of the finest known examples of Bushman paintings of animals and men, some of them possibly thousands of years old. It seems to be an established local practice for sightseers to scrub the paintings with a wet cloth to make the colours show up, and some worthies have scrawled their names across them. As far as I could see little or nothing is done to protect them.

The Paramount Chief—at present a woman regent—still has great authority in Basutoland, and under her are the chiefs and subchiefs and headmen. Side by side with this tribal organization is the British administration under the Resident Commissioner, with his districts under him. The system must call for much tact and when necessary firmness on the part of officials. Reforms have been introduced in recent years to get rid of some of the evils which had grown up under the system of chiefs and to place able and reliable men in positions of responsibility. Some of the chiefs are hardworking and conscientious men and some are the opposite, but the bulk of the people are still attached to the system, largely because they feel that it helps to preserve the national unity and the tribal way of life.

There are no white settlers in Basutoland as there are in Swaziland and the country's present separation from the surrounding Union territory permits the development of policies independent of those which prevail there. The administration's policies are thus directed solely to improving the welfare of the Basuto, within the limits of a poor country's budget supplemented by grants from the United Kingdom.

All Ektachromes by th

Beyond this range lie the Tibetan markets frequented by the traders of Harsil when the snow melts

Himalayan Traders

by JOHN TYSON

THE sun was shining and a strong breeze blowing when first we entered Harsil; and that is how I shall always remember it. Passing the boundary wall with its gaily waving prayer-flags, we followed a street lined with chalets, to the centre of the village. Here we were greeted by a slightly built man with laughing eyes and a ready smile, who showed us into his courtyard. Minutes later, seated on carpets in the shade of the veranda, we were sampling from silver cups our first Tibetan tea.

Our host's name was Govardan. We were looking for a suitable base from which to organize climbing expeditions into the neighbouring Himalayan mountains and he had many recommendations to offer. If we required porters for our expeditions, he would arrange for this. He would come himself as head porter, and would climb with us to the highest summits. Moreover, his uncle, Dalip Singh, was headman of Harsil and would ensure that our visit was a pleasant one. Meanwhile, as long as we wished to stay, we must be his guests.

We had fallen in love with the place and the people. Here was something entirely new. We experienced the thrill of contact with people whose traditions bore no trace of the Occidental world. So we decided to stay here and learn as much as we could from their way of life.

Harsil is built on the floor of a broad valley along which the Bhagirathi winds its way

The fields of amaranth and buckwheat (above) *which redden the September landscape round Harsil belong to the Hindu community at Jhala. From them the Jadh traders who founded Harsil village* (opposite, top) *could only buy infertile strips; though some Jadhs, such as the family of the boy reaping* (opposite, bottom), *have private arrangements for sharing the harvest of the Jhala folk*

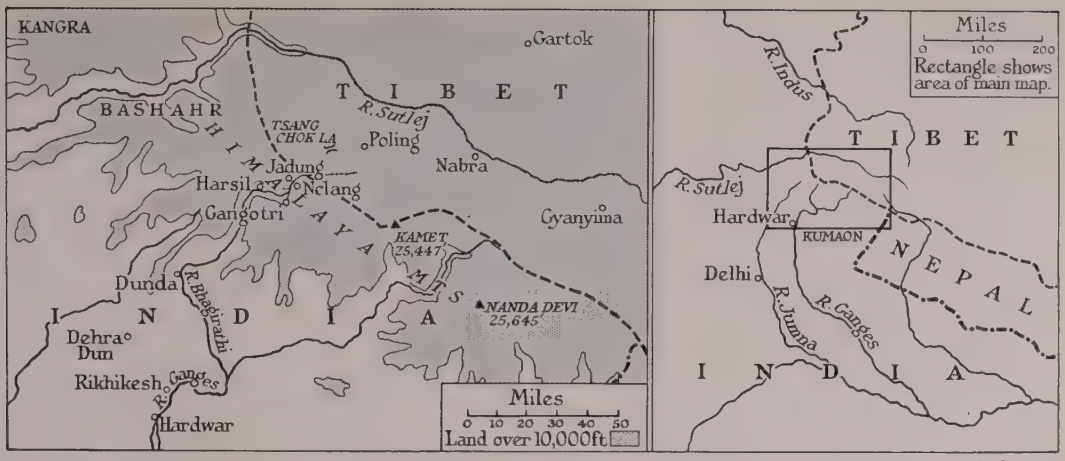
over its shingly flood-plain. To the north-east lie the highest settlements, the passes and Tibet. To the south runs the main range of the Himalaya, through which the river cuts its way in a tremendous series of gorges to the foothills and plains of India. Harsil thus lies in trans-Himalayan India, a zone with affinities, both physical and cultural, to Tibet.

Climatically, Harsil owes much to its position in the rain-shadow of the Himalayas. Even during the monsoon, when the nearby mountains are heavily hung with grey clouds, the rainfall is slight. The cool evening temperatures at that altitude (8000 feet) and the large amount of sunshine tempered by the breezes which race up the valley every afternoon combine to produce a perfect summer climate. During winter, however, the whole of this zone becomes snow-covered, and almost all the inhabitants withdraw, either to trade in the foothills or to "eat sunshine" in the plains.

Several distinct types of economy are practised side by side in this trans-Himalayan zone, but all are governed by the climatic regime. There are the agriculturalists, the pastoral nomads and the traders.

The peasants, whose terraced fields are scattered among the deodar forests of the lower hillsides near Harsil, are the first to arrive in the spring; but they have barely time to raise a single crop of hill rice or buckwheat

This Buddhist teacher performs the family rites for the whole Jadh community. In his hands he holds a dagger and a thunderbolt emblem, symbols of an exorcist. He officiated at the funeral of Jidha shown in the following photograph (*page 145*)



A. J. Thornton

before winter is once again upon them. They are Hindus, and several of their villages have close ties with the neighbouring shrine of Gangotri, visited annually by thousands of Hindu pilgrims.

The pastoral nomads arrive in Harsil in May with their flocks of sheep and goats. By July they have reached the highest alpine pastures where patches of the winter snow still lie. It is a hard and lonely life, with many weeks of isolation in the mountains. In September the downward trip is begun. There is a halt in Harsil for the shearing, but by October they are once again *en route* for the winter grazing grounds in Hardwar and Rikhikesh.

The village of Harsil itself is almost exclusively a trading settlement. Although the migrant graziers and the peasants of the adjacent villages play some part in the economy, it is trade with Tibet which is the mainstay of Harsil. The village is built along a single street and consists of two rows of stoutly built stone and wooden houses. Govardan's house, where we were staying, was in the centre of the village, opposite that of Dalip Singh, the headman. Racially the people are closely related to the Bhotias of Kumaon; they refer to themselves as Jadhs.

Harsil is not the only Jadh settlement, though with its 330 inhabitants it is the largest. Two other Jadh villages—Nelang and Jadung, with, together, 220 inhabitants—lie even closer to the Tibetan frontier and serve as final staging points for the excursions into Tibet.

The trade of the Jadhs follows the traditional lines. Tibet possesses a few products of great value, though its barren terrain has made it dependent upon India for much of its food-supply. It also lacks certain luxury goods which India can supply. Thus in winter the Jadhs send representatives down to the markets of Dehra Dun and Rikhikesh for the goods they will trade the following summer in Tibet. These include sugar, molasses, tea, metal utensils and luxury supplies such as tobacco and matches. From the vicinity of their winter settlement they can obtain cereals, including rice and wheat. Buckwheat and barley for trading purposes they grow themselves.

Unlike the Jadhs at Nelang and Jadung, those at Harsil have little land for agriculture. A few families have bargained for a share in the crop-land of the local peasants. In exchange they manure the land by grazing the flocks on the hillside. In general, however, these great travellers despise the sedentary agriculturalist. The summer months are thus periods of leisure for the women while their menfolk are on their trading missions. Weaving and carpet-making occupy their time. Wool may be bought from the graziers but the finest qualities come from Tibet. Spinning is in general the work of the men.

Living as they do between India and Tibet, on the borderline of the Hindu and Buddhist traditions, the Jadhs are under the influence of both. The Hindu rites are performed by visiting priests from the village of Mukba. Lamas attend to the Buddhist ceremonies.

The *Sher-gen* festival which we witnessed in Harsil does not belong wholly to either the Hindu or the Buddhist tradition. It owes its introduction to those Jadh families who originate from Bashahr, to the north-west. According to the legend, one family possesses the ability to foretell the future. The man at present with the power was one Chinten Yen,

It was he who explained the details of the two-day ceremony to us. He told us that the power is hereditary—his father before him had the faculty and the successor will be found in his family, his eldest son being the first candidate.

At dawn on the first day, three goat kids are brought to the temple of Kali in the house of Chinten Yen. Water from the Ganges is sprinkled over them and poured into their ears. When one of the kids shakes its head, this is taken as an omen, and the animal is sacrificed. Meanwhile the orchestra in the courtyard keeps up a continuous drumming and all the participants invoke the deity; Chinten Yen falls into a trance, becoming the incarnation of the goddess Kali. The onlookers then pose questions to the goddess about the future year. If tears come to the eyes of Chinten Yen, it is a bad omen. He does not speak. A five-gallon tin of the local spirit, *Shur,* is produced. Later Chinten Yen performs a dance; there is little sign of the trance and much evidence of widespread drunkenness. On the second day the family of Chinten Yen holds a private festival at home.

This ceremony is very closely paralleled by the *Shel-ku* festival, held two weeks later at the nearby Hindu village of Mukba: the local deity, Someshwar, is made to perform a dance while a trance-man answers the questions of the onlookers. It is notable that the Hindu Brahmans take no part in either ceremony.

Among Buddhist rites, we witnessed two funerals in the Tibetan style. The first was that of Mohur Singh—*alias* Gul Tu (like most Jadhs, he had both a Hindu and a Tibetan name). The ceremony took place on the banks of the Bhagirathi. All the men of Harsil assembled there, and while the body of Mohur Singh burned on a pyre, three lamas chanted to the accompaniment of bells, pipes and pellet-drums.

The second funeral was that of Jidha, a poor Tibetan beggar-man, one of the tent-dwellers at the eastern end of the village. The lama led the small procession across the turf to the rocky river-bank. Then a token fire of a few sticks was kindled on the shore, and while the lama performed the last rites in a mournful chant, the body was committed to the torrent. In that majestic setting it was an unforgettable scene.

The trade-route over the Tsang Chok La has been followed by the Jadhs from time immemorial, but Harsil itself is new. Dalip Singh told us of its origin:

"When I first came, there was no village, but at Jadung and Nelang twenty-five families who had migrated eastwards from Bashahr were in occupation. Apart from these two summer settlements, we were nomads, taxed by landlords wherever we went. Thirty years ago we purchased for 500 rupees from the peasants of Jhala this tract of rough, stony land, and here we have built our homes."

Each limit of the purchased land is marked by a *mendong.* This is a breastwork of cement and masonry upon which are laid stones bearing sacred Buddhist texts. Lying outside the mendong at the western end of the village there is a small settlement of Kolis (spinners and weavers), a sub-caste of the Doms, the depressed classes. Some originate from Kangra in Punjab, others from Bashahr. Altogether they number twenty families. The Jadhs, for whom they work, regard them as little better than slaves.

Beyond the mendong at the opposite end of the village is a small Tibetan settlement. Some of these Tibetans have built houses and are in the process of becoming assimilated into the Jadh community; others live in tents and return in winter to Tibet. They are engaged in local industries, such as the manufacture of carpets and the cutting of stones for the mendong.

Among the Jadhs themselves there are three main classes of people. There are those richest Jadhs who own houses at one of the frontier posts (Nelang or Jadung), as well as at Harsil itself and at Dunda in the foothills where the Jadhs have their winter quarters; others have houses only in Harsil and Dunda; while those of the third category own no house.

This distinction is reflected in the details of the seasonal migrations. The first folk to arrive in Harsil are the families owning houses there. Those with additional homes at Nelang or Jadung at once despatch a party ahead to plough the fields there and sow the barley, buckwheat and potatoes; but the majority delay for about a month in Harsil while the snows melt on the passes. When they vacate their houses, the homeless Jadhs arrive in Harsil, and lead a 'squatter' existence on the verandas of the empty homes.

Soon after the start of May the first parties of Jadhs reach the frontier pass. Their goods are carried by flocks of goats and sheep, in small pannier-bags of cloth and leather. Before the commercial operations of the season can begin numerous taxes must be paid and tribute presented to the Dzongpen, the local Tibetan administrative official. The trade is conducted chiefly in three markets. Poling, the nearest, is one week's journey for laden

Poul B

The Jadhs live on the borderline between Hindu India and Buddhist Tibet. In the Buddhist ceremonies lamas are guided by astrology in deciding upon the appropriate method of disposal of the dead: by cremation or (above) *by committing them to the torrent.* (Below) *Neither Hindu nor Buddhist, the* Sher-gen *festival turns upon the hereditary prophetic powers of Chinten Yen, here performing a dance*

Poul B

Author

Early in October the Jadhs prepare for their journey from Harsil to their winter home at Dunda. Each day brings a fresh invasion as the traders return from Tibet. Tents spring up in the village and the shouts of reunited families mingle with the pony-bells and the barking of sheep-dogs

animals. Nabra, on the Sutlej, is eleven days' distance and Gyanyima, the farthest east, two weeks' travel. Unladen animals can cover the distance in less than half the time.

Each trader has a correspondent in the Tibetan market who collects in advance the goods needed by the Jadh for his winter sales. A stone serves to identify the representative of each party : it is broken into two parts, one of which is retained by the Tibetan, the other by the Jadh.

Trade is chiefly by barter. Among the articles brought back from Tibet, wool is much the most important. Some of this is retained by the Jadhs for their local industries, but the majority is for sale. Salt and borax are still carried despite competition on the world market. Other products include precious stones, gold dust, filigree silverware, yaks' tails, furs, hides, carpets and livestock—especially sheep, goats and ponies.

We asked Dalip Singh about the future trading prospects. Trade was declining, he told us. In quantity it was far inferior to that of the neighbouring Bhotias of Kumaon. However, they were always looking out for new ventures, and were not pessimistic. Rearmament, for example, had made wool prices soar to unprecedented heights.

We last saw Harsil early in October on our return from exploration of the mountains and glaciers of the Gangotri Group. Govardan had been true to his word : together we had made the first ascent of the highest summit. Now it was time to part. As he told us sadly, he must look for his sheep, his ponies, his mother and his goats and set off for Dunda.

The passes will once again be open, and this July Govardan will be visiting the market of Gyanyima. Among his goods there will be two Tibetan carpets for us, so I hope he is driving a good bargain.

Pioneers of the French Film

by JEAN QUEVAL

In our April number Dr Manvell, Director of the British Film Academy, explained the scope of a series of articles which we are publishing with his collaboration. The first group of articles will deal with countries in which film-making has for some time reflected the national life; and we begin with France. The author, a leading French film critic, gives a personal definition of the sense in which French film-makers do and do not succeed in expressing their country's spirit

THERE is something disturbing in the French cinema. It is that, despite an important contribution to the discovery and technical progress of the medium, and numerous films of note throughout the fifty-odd years of its existence, there is nevertheless no distinctly recognizable French school. There have been, one might say, several French schools. But one cannot tell a French film from an American, an Italian or a British film in the way in which it is possible to refer to a Western as American-made, or to a humorous, true-to-life, candid farce as an Italian post-war product. Even the recent Ealing comedies have a distinctive flavour, which some critics like to trace back to the influence of the British documentary school. The good French films are too highly individual to have much in common—whether it be outlook, subject-matter or style. There was, however, a period of a few years before the last war, the influence of which has been since occasionally felt, when this contention would have been proved partly incorrect. Then a high proportion of the good French films were primarily due to Jacques Prévert, one of the best screen-writers ever. His influence gave for a time—through films like *Le Crime de M. Lange, Le Jour se Lève, Quai des Brumes,* perhaps even *Les Enfants du Paradis*—an appearance of cohesion to the French cinema which was wanted before and has been lacking since.

This highly individual approach of the French film-makers has been felt for good and bad. But just as no national school has been evolved, so the French cinema has, on the whole, failed to record typically French habits, customs and behaviour. To have done so, it has to be admitted, would have been peculiarly difficult owing to the fact that the French are a much more varied nation than most and that each of the provinces of France has a very distinct character. But deliberate attempts at a sociological record of a sort, in one province or another, have been exceedingly rare. Similarly, social realism is lacking in otherwise distinguished French films. A great lack. For social realism is of capital importance in the cinema, both in feature films and in documentaries. There is of necessity a documentary background to a fiction film (conversely there is, one might say, a background of fiction, or a story to be, in a documentary film).

Perhaps English readers will rather disagree about this lack of the French cinema, because, to them, it has some exotic quality (*"Les nègres commencent à Calais"*). What is strange seems more profoundly real than what is common knowledge, where clichés become conspicuous. I also believe that British audiences are sensitive to a lifelike quality of French films, due to the fact that their makers suffer from comparatively few inhibitions in recording man's feelings. This, perhaps, is all the more vivid because the same seeming audacity applies to attitudes and vocabulary. But the fact remains that a French film-goer has persistently to deplore the incapacity of the indigenous cinema to succeed in portraying a province, a village or a profession—in short, almost any sort of community. The frequent weakness of secondary parts in which a type is wanted rather than a character springs from the same incapacity. Some French films, of course, fully succeed in capturing the broad atmosphere of a place; among these, notably, the charming early Clair pictures (*Quatorze Juillet, A Nous la Liberté*) about the popular districts of Paris, and Pagnol's Provence, whether it be Marseilles or the life of the countryside, whether he shot the films himself after Giono's works or whether they were made after his own plays under his supervision (*Marius, La Femme du Boulanger, Angèle, Jofroi*). But it would be difficult indeed to find films standing for the French provinces or professions in the way that Humphrey Jennings' *Fires Were Started* stands for London in 1940 or Harry Watt's *Target for Tonight* for the R.A.F.

Innumerable documentaries of all descriptions have, of course, been shot, but most of them are a mere record of the

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René Clair and Marcel Carné are both stylists whose work is indigenous to the French cinema: Clair with his gay, urbane wit and delicate sentiment, Carné with the atmospheric artifice of the films he based on Prévert's melancholy scripts. (Above) *Clair's* Quatorze Juillet*;* (below) *Carné's* Quai des Brumes

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National Film Library

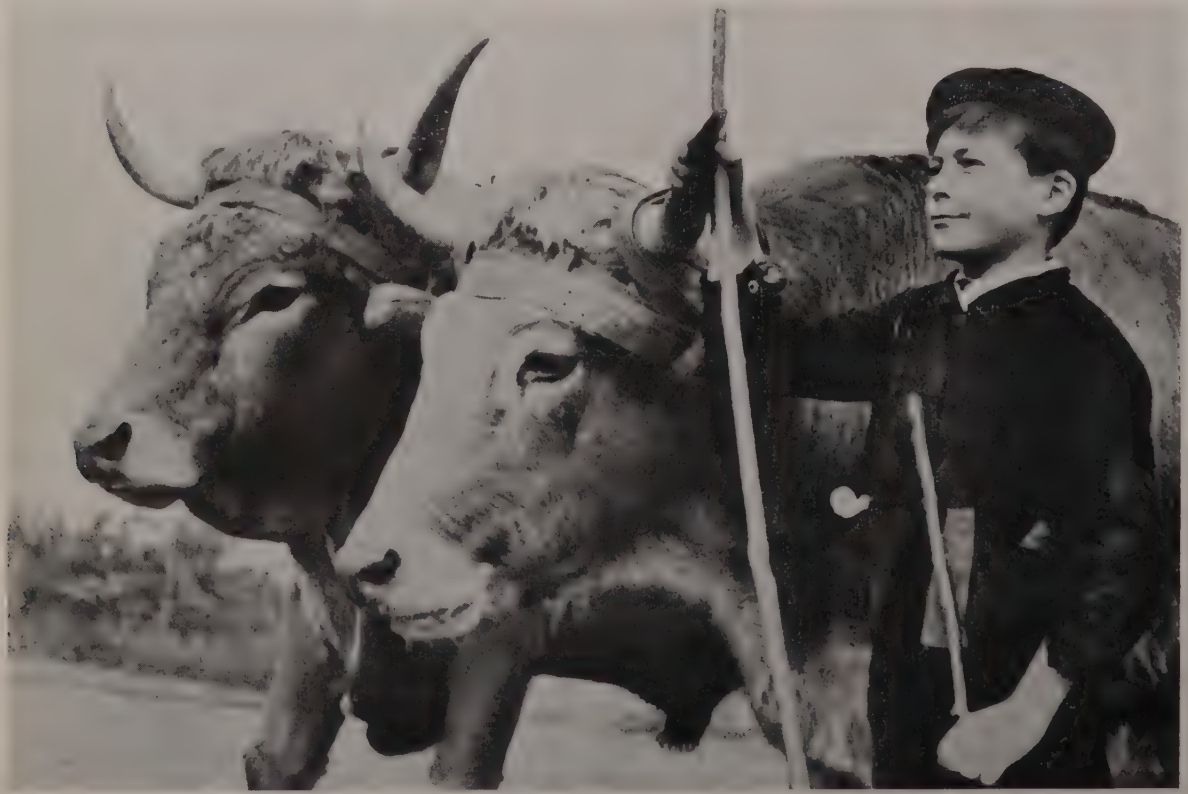
Clair returned to the style of his early films made in France twenty years ago in his most recent fantasy, Les Belles de Nuit (above), *the story of a young man who prefers his dreams to reality. Pagnol specializes in the production of films set in Provence;* (below) *a scene from* La Fille du Puisatier

National Film Library

National Film Library

French documentary shares the individual style of the most distinctive French feature films. Yannick Bellon, in Goémons (above), *re-creates the desolation of life on a Breton island. In* Farrebique (below) *Georges Rouquier follows with a poet's love the seasons in the farming district of Rouergue*

British Film Academy & Roger Manvell Collections



obvious, or else their audience is limited owing to their didactic character. Two, however, may be mentioned, which are not merely concerned with the flattering and the expected. What they have to record is, to a great extent, a sociological, almost an ethnological revelation, and both of them are literally, movingly true. These two films are *Farrebique*, a feature-length record of life throughout the year in a farming household in Rouergue (which lies between the Auvergne and the Cévennes), and *Goémons* which depicts the unimaginable destitution in which peasants and fishermen are left in a tiny Atlantic island off the coast of Brittany. Seaweed is their only chance to make a living and they refer to the continent, a few miles away, as to a fabulous land. Playing long-forgotten, over-used gramophone records is, apparently, their sole distraction. This was the first film made by a young woman, herself of Breton stock, Yannick Bellon.

The subject-matter of *Farrebique* is less striking. It would be still possible to find peasants in other provinces where electricity can only be brought in at the expense of some other improvement in farming installations; where High Mass on Sunday, together with meeting neighbourly farmers afterwards at the local café, is the sole highlight of the week; where strict morals go without saying. But it is doubtful whether, in the whole French cinema, there is another film so successful with such a deliberately bare subject-matter. Indeed, *Farrebique* was a labour of love in which Nature—the complete title is *Farrebique et les Quatre Saisons*—went a long way to explain how people on the land can do without urban amenities. In sharp contrast with the fishermen of *Goémons*, the peasants in *Farrebique* are not destitute people. They possess their land, they gradually improve upon it and they have long family memories. The director of *Farrebique*, Georges Rouquier, is himself part of the family we see on the screen—one of the nephews who was obliged to leave the land. Parts of the dialogue had to be sub-titled in French as the people of Rouergue still frequently use their own dialect.

While the French cinema cannot on the whole be said to have successfully recorded indigenous life beyond the surface, its contribution to filling the map of the world is impressive although, to a great extent, unknown. The five continents and the seven seas have seen French people eager to depict the innumerable ways of what, to them, was 'otherness'. As is not uncommon with the French people, their lack of concern with ultimate results has wrecked their, on the whole, remarkable achievements. Much of what they have thus valiantly recorded is sadly lost. Perhaps a few words should be said, in any case, of the French pioneers in various directions before we attempt a description of the ground covered and the methods used.

The first man to take shots from an aeroplane was a Frenchman, Félix Mesguisch, who did so in 1908 at the invitation of Wilbur Wright. Mesguisch was one of the intrepid, naïve men, inspired by Jules Verne, who belonged to an era now closed. His exploit of camera-recording by plane was followed by countless others as *chasseurs d'images*. His contribution to the newsreels has probably been as great as that of anybody else and he has left, in his memoirs, a lively account of his career. His cinematic record is, of course, now dated and, to a great extent, useless because of his superficial outlook. He was interested in the merely strange and the sight of an elephant obviously fired his imagination. Essentially a cameraman with a passion for travelling, he is representative of the age in which compulsory education made the people of Western countries aware of the existence of other people—an age which came to a close with planes and liners taken for granted, when Paul Morand, a fashionable novelist of yesterday, wrote a book of distinguished boredom significantly entitled *Rien que la Terre*.

Another cameraman, Gaston Madru, also working for the newsreels, thought he had invented the waterproof camera shortly before the war. He was wrong. An American, Williamson, had preceded him by a few months. Underwater cinema also required the invention of the self-contained diving-suit. This was finally achieved by another Frenchman, Commandant Le Prieur (who, incidentally, also has to his credit the first flight in a glider, and a cinematic invention). The undisputed pioneer of underwater cinema has been, for a number of years now, Captain Jacques Yves Cousteau. It is not rare to see in his films shots in which man and fish of a similar length are swimming side by side. Perhaps the best known is *Autour d'un Récif* in which the jazz music appears oddly relevant to the pictorial discovery of the strange, cruel, silent sea-world. In his most recently released picture, Cousteau explores a Phoenician ship. It is the first underwater film made in colour, and it was found necessary to use artificial light at depths at which the camera was otherwise only able to record black and white. Captain Cousteau has

recently made a long cruise in Far Eastern waters. His pioneering has not been ignored by the commercial cinema : both Rossellini and the American Dieterle have recently included in their feature pictures scenes of tunny-fishing, which have gained much through the addition of underwater shots.

Similarly, the pictorial recording of mountaineering owes probably more to Marcel Ichac than to any other present-day film-maker. In 1936 he left for the Himalayas with Henri de Ségogne's expedition and the film he brought back was awarded the first prize for documentaries at the 1938 Venice Festival. All that commercial audiences were then allowed to see of it was a short extract to which a few shots had been added : the whole being devoted to the message that at the top of the Himalayas cocoa does you good ! During the war, Marcel Ichac heard that a guide, Armand Charlet, had in 1928 climbed for the first time the five *aiguilles du diable* in the Alps. He asked him to do it again. Charlet agreed, took Ichac with him for filming purposes, and once more succeeded. This, however, was mere training to Ichac. He was, a few months ago, a member of the Annapurna expedition led by Maurice Herzog, which was looked upon by specialists as one of the most remarkable mountaineering exploits. His film is a telling record. But Marcel Ichac has also taken part in numerous expeditions of a different character, as we shall see.

Underwater and mountaineering films are but chapters in the contribution of the cinema to greater knowledge of the world—of lands and peoples. French film-makers, broadly, fall into three categories : the individual adventurers of the sporting type; the expeditions sponsored by popular industries in the twenties; and nowadays the more self-conscious, more scientific ones, often subsidized by the Musée de l'Homme for specific purposes.

Among the dozen better-known individual adventurers are two married couples : Bertrand and Geneviève de Colmont, and Alfred

Captain Cousteau has made a world reputation for his work as a pioneer in undersea exploration. Among the films of great beauty he has brought to the surface are Epaves *and* Autour d'un Récif. *In his fascinating book* The Silent World *he minimizes the dangers accompanying such ventures—*

The Silent World *by Captain J. Y. Cousteau with Frédéric Dumas (Hamish Hamilton)*

From Annapurna *by Maurice Herzog (Jonathan Cape)*

—but these cannot be gainsaid in relation to the pictorial records of mountaineering made by Marcel Ichac, culminating in the film Annapurna. *His part in the expedition led by Maurice Herzog is described in the latter's book of that title, illustrated mainly with Ichac's photographs*

and Geneviève Chaumel. The latter couple brought from Asia in 1929 a number of films first known as *La Symphonie Exotique, Sortilège Exotique, L'Ame Hindoue*—titles reminiscent of the feeling of wonder still experienced by audiences of the time. All of them were re-edited later with an added sound-track. Alfred Chaumel also made a more purposeful film relating the fight against illness in the Cameroons (*Réveil d'une Race*). On the whole the African continent has been more thoroughly explored by individual French film-makers than any other. Father Dufays' films—*De Dakar à Gao, Sahara Terre Féconde*—convey travelling impressions with a meaning, and were made in 1931–1933. The Marquis de Wavrin made extensive ethnographical reconnaissances in America : his film on the Jivaros, *Au Centre de l'Amérique Inconnue*, dates from as long ago as 1925. In 1933 he brought back *Au Pays des Sorciers et de la Mort*. Often, of course, the spirit of adventure matters more than the scientific purpose and the sporting record to the film-maker. Thus we see the Colmonts, with a companion, Antoine de Seynes, mastering the Colorado canyons for the first time by using kayaks instead of heavier canoes. Amongst films shot in other parts of the world, perhaps one should mention *Chez les Mangeurs d'Hommes*, made in the New Hebrides in 1927–1928 and re-edited with a sound-track in 1943.

The first seriously organized expeditions were mostly sponsored by Citroen, the manufacturer of popular cars. They were of a spectacular nature. The first one, launched in 1923, went through the Sahara, and Paul Castelnau, its geographer, made two films out of it. A similar, more ambitious expedition, with the same sponsor and the same leaders—Haardt, Audouin and Dubreuil—was made two years later. This time, however, the film man was a professional : Léon Poirier. With

courtesy of Librairie Plon

Travel-films of note arose from expeditions sponsored by French industrialists in the 1920s. Their best reporter was Léon Poirier, a professional film-maker who came to specialize in the portrayal of life in Africa and Asia. His first film, La Croisière Noire, *was made in the Sahara in 1925. The photograph here is of a Mongol princess of Zungaria who appears in* La Croisière Jaune*; she was educated in Peking and spoke English, French and Russian*

the pictures he brought back, two films—*La Croisière Noire* and its follow-up, *Amours Exotiques*—were made, for commercial purposes. *La Croisière Noire*—an honest enough film, although very superficial—set at the time a reasonably high commercial standard within a relatively new *genre*. Léon Poirier, together with André Sauvage, shot in Asia a similar film in 1934, *La Croisière Jaune*. In between, he directed a composite feature, *Aventures des Mers Exotiques* (1929) in which, he insisted, "Nature is one of the main characters". Later in his career he shot films about the celebrated Father de Foucauld and eventually retired, disgusted with the trade.

To return to the African expeditions of the twenties, a number of others were launched on a lesser scale. *Images d'Afrique* was brought back by the "Mission Proust-Peugeot", and *Les Mystères du Continent Noir* by the "Mission Gradis-Delingette" (Chad was the scene on the latter occasion). Tragin and Duverne drove from the Atlas to the Red Sea in 1928. *Le Désert Vaincu* was the appropriate title of their film. All in all, it was a period in which going to places mattered more than looking at them, and when these hurried travellers did look their appetite seemed to be satisfied with recording the conspicuous. But they showed the way and started a fashion. Léon Poirier, their best reporter, was a true pioneer in his day, though obviously more of the cinema than of exploration—and perhaps he is now underestimated.

Exploration assumes an altogether different meaning nowadays. Scientific research has of late been its watchword; the explorer has taken the place of the reporter; a sense of purpose is what fires the enthusiasm of young people on the way to discovery. Conversely, the strange and the conspicuous have ceased to be of any importance as such. Audiences do not necessarily have to be blud-

British Film Academy & Roger Manvell Collection

French and Belgian explorers and film-makers have during the past quarter-century produced large numbers of ethnological films in many parts of the world, particularly in Africa. The scene shown above is from a film called Les Noirs Evoluent, *and that below from* Danses Berbères (*by Serge Debecque*)

By courtesy of Jean Thevenet

geoned or even shocked any more. No writing-up is expected from the camera. It is significant that one of our determined explorers, Jean Rouch, learnt how to handle it in a plane, from a fellow-worker, on his way to the Near East. Marcel Ichac spoke for the new school when he wrote : "The audience should have the feeling that everything would have been much the same had a camera not happened to be on the spot."

The first expeditions of that sort were organized in 1935, when P. E. Victor, Fred Matter and their companions left for Greenland, and in 1936 when Matter shot *Haute-Amazone*. This was made on the first of five French expeditions to the Amazon led by Bertrand Flornoy, who himself shot films on the three last expeditions in 1947, 1950 and 1952. In 1938 René Clément, then a very young man attached to the archaeological mission led by Jules Barthoux, made a revealing picture, *Arabie Interdite* (he is now a distinguished director of feature films). This was a long film in colour shot in 16 mm., full of scenes of unknown, secret Yemen. New names have joined in since the war. Albert Mahuzier has brought back telling pictures of big-game hunting in Central Africa and of fishing on Lake Chad and its floating islands. Together with Henri Lhote, he has made two interesting pictures about the Touareg, filled with shrewd observations. Others—too many to list in detail—have made films of life in Nigeria, French Guiana, Brazil, Chile, Peru and Colombia.

But the main work of scientific exploration with which the film is associated has probably been made, for a few years past, by the Expéditions Polaires Françaises. Under the general leadership of Paul Emile Victor, they divide into two teams : one exploring the Arctic (Greenland) and the other the Antarctic (Adélie Land). A notable personality is André-Frank Liotard who is in charge of the latter group and who has organized an Explorers' Circle. The equipment of these polar expeditions is superb. To film the parachute-dropping of some of this equipment, it is said that while Marcel Ichac (who joined them on one occasion) was using his camera on the ground, another man, Jacques Ertaud, was shooting from a plane, the two of them keeping in touch by radio. This sort of thing explains the professional skill and polish of such films. My sole complaint is that they now tend to be somewhat inhuman and detached. Of the now numerous works brought back by both teams, two shorts made in colour about the Eskimos' everyday life stand out : *Printemps Arctique* and *Les Hommes du Phoque*. While the Arctic expedition includes some film people in its team (Jean-Jacques Languepin, Samivel, Ichac), the Antarctic one does not. Another genuinely scientific expedition composed of two different research teams—the "Mission Ogoué Congo"—left in 1946. One group specialized in prehistory, the other in ethnographical research. They brought back two films of lasting interest : *Au Pays des Pygmées* and *Pirogues sur l'Ogoué*.

Be it noted that ever since such films were first made a high proportion of them were dangerous affairs. On Lake Chad Mahuzier had to spend fifty hours in his canoe. Marc Boureau had a narrow escape from piranhas in a Brazilian river (they are small fish which swim in large shoals and hardly take a minute to eat up a man). In Yemen, René Clément had to use his camera under the protection of armed sentinels.

This article would not be complete without a word on sound-recording. The reader has already noticed that a sound-track was added to a number of films made during the silent days of the cinema. But this method has also later been used for wrong ends. It is only too easy to make a fake in the auditorium by recording guitar sounds to suit a South Sea island picture, or tomtoms of a sort for an African one. Those spectators who have seen and heard the remarkable piece called *Sons d'Afrique* by the Belgian Gérard de Boe—and countless others as well—would be able to tell the difference. Nevertheless, the wrong method is still used. At least conscientious film-makers, unable to do better, have taken note of musical themes on location and got them registered afterwards as best they could (as did, for example, Poirier, for *La Croisière Jaune*). Others meet with a stroke of luck as in the case of Jean Mugeli who had shot a silent film in Melanesia, *Visions Australes*. The following year he came in contact with Kanaka people from the New Hebrides, at the Paris Colonial Exhibition. They were able to decipher the silent words on the screen and volunteered to dub the picture. Not till 1936 did Roger Leenhardt, while shooting *Rezzou*, first register a sound-track in the Sahara. At the moment by far the best method available —and it is practically always used by the French explorer, wherever he may be—consists of a separate sound-recording on location which later becomes part and parcel of the film. Without describing here the technical process through which this is done, one can safely assert that it helps the explorer to give his audience new and valuable evidence of the world as it really is.

In recent years film-making has been closely associated with French expeditions devoted to scientific research. Marcel Ichac made Groënland *for the* Expéditions Polaires Françaises, *in the course of which the cameraman, Jacques Ertaud* (right), *in an aeroplane photographed equipment being dropped by parachute for the expedition, keeping in radio communication with Ichac who was photographing from the ground.* (Below) *A parachute straining at its cords while a tracked vehicle picks up the load that has just been dropped*

By courtesy of Jean Thevenot

By courtesy of Radio-Cinéma

The Ocean Stream

I. The Antarctic Ocean

by F. D. OMMANNEY

The author, whose twenty-four years of scientific research have taken him to the Antarctic, Arctic and Indian Oceans, surveys for us in a series of three articles the causes and character of ocean currents, how they differ from one another, and their effects on human and animal life. His non-scientific publications include South Latitude, The Ocean *and* The Shoals of Capricorn

About two-thirds of the earth's surface are covered with water to an average depth of a little over 2000 fathoms, more than five times the average height of the land. This watery envelope is in constant circulation, masses of water flowing at varying speeds from one part of the ocean basin to another. The circulation has in general the form of a series of eddies owing to the rotation of the earth.

The chief forces which give rise to ocean currents, and cause vast bodies of water to move in fixed directions over the surface of the globe, are the prevailing winds, the centrifugal force set up by the earth's rotation, and the differences in the density of the water from one place to another caused by variations of temperature and salt content. Of these the first two are the most important and affect in the greatest degree the upper layers of the ocean. Strong constant winds propel the surface water forward and the motion at the surface is transmitted to the layers underneath. Owing to friction within the water the motion decreases steadily downwards until a depth is reached where it ceases. The centrifugal force of the earth's rotation causes the mass of moving water to be deflected in a direction 45° to the right of the wind in the northern hemisphere and to the left in the southern hemisphere. Differences in density give rise to water movements in a vertical sense since cold, or highly saline, water is heavy and sinks, while warm, or less saline, water is light and rises.

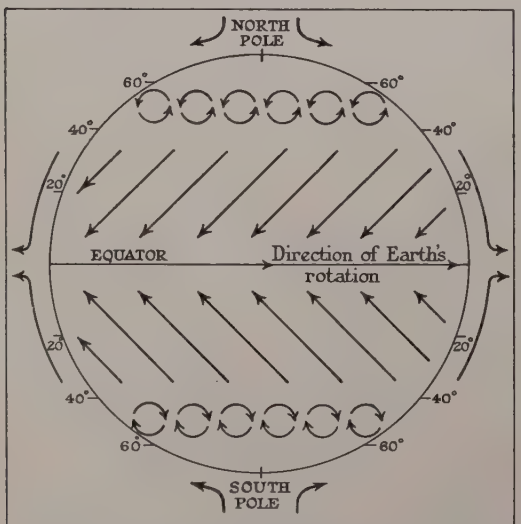


Diagram illustrating air flow over an imaginary globe with no land masses.

A. J. Thornton

If the world were a sphere covered with water without any land masses, one might picture the simple kind of wind circulation which would be set up within the enveloping atmosphere. The two poles would be farthest from the sun and would therefore be cold, while the Equator would be warm. Air would therefore rise at the Equator, where there would for this reason be a belt of low pressure, and it would sink at the poles where areas of high pressure would, as a result, be permanently located. At the junction of the cold polar air with warmer air on the confines of the polar regions a zone of disturbed conditions would encircle the globe. Since air flows from regions of high pressure to those of low, there would be a continual stream of air towards the Equator from the poles. But since the globe would be revolving in a direction which we describe as from west to east, there would develop a slight lag in these longitudinally directed air streams, which would tend to hang back in relation to the rotating globe. The stream flowing from south to north, south of the Equator, would therefore be deflected towards the west and thus become a south-east wind, while that flowing from north to south, north of the Equator, would also be deflected towards the west and become a north-east wind.

In the southern half of our globe, as we know it today, this primeval simplicity is to some extent preserved, for by far the larger proportion of the land mass is situated in the northern hemisphere. The Southern Ocean is a vast expanse of water unbroken except by small and lonely islands. Over the Antarctic Continent sits a permanent high-pressure

area of cold dense air, around which a chain of cyclonic depressions constantly revolves. Forming, deepening, filling up and dissolving they move from west to east one after the other eternally over the desolate expanse of ocean. In the southern hemisphere winds blow clockwise round depressions so that the resultant wind caused by all these cyclonic disturbances is perceptible in the lower latitudes, the "Roaring Forties", as a continuous westerly wind of varying intensity, and in higher latitudes, above 60° S, as an easterly wind.

This westerly resultant wind sets up at the surface of the Southern Ocean a continuous drift of water from west to east known as the West Wind Drift. Owing to the earth's rotation it tends to take a direction at 45° to the north of the prevailing wind and therefore flows, on the whole, north-east. The complementary resultant easterly wind sets up an opposite drift from east to west flowing along the coast of the Antarctic Continent. This is called the East Wind Drift, but it is a less massive body of water than the West Wind Drift because it is limited in extent and slowed down by the coast of the continent.

The East Wind Drift moves slowly westward along the coast into the great bights of the Ross and Weddell Seas. In each it comes up against the western sides of the bight, against the coast of Victoria Land in the Ross Sea and against the Graham Land peninsula in the Weddell Sea. In each case a clockwise spin is imparted to it. In the Weddell Sea the long thin finger of Graham Land, reaching up to the tip of South America, turns the clockwise drift away towards the north-east where it joins the West Wind Drift. But on the western side of the Ross Sea, which is a shallower bay altogether than the Weddell Sea, there is no projecting finger and the outflowing water slips gently round the corner past the Balleny Islands.

Along the grim forbidding coastline of the Antarctic Continent, and for hundreds of miles out to sea, the surface water freezes during the southern winter. There are fre-

A. J. Thornton

Paul Popper

"Surrounded by wastes of ocean the Antarctic Continent has remained isolated since remote geological time." Along its coast (above) *and far out to sea the surface water freezes in winter. The frozen crust breaks up into floes* (below), *which conglomerate into masses of floating ice, called pack-ice*

Paul Popper

National Institute of Oceanography

Man has penetrated these defences only recently, as a hunter, explorer or scientific investigator. (Above) *The Royal Research Ship* Discovery II *pushing south through the pack-ice.* (Below) *One of the base camps of the Falkland Islands Dependencies Survey on an island off the coast of Graham Land*

Falkland Islands Dependencies Survey

al Institute of Oceanography

Flat-topped icebergs are familiar to all Antarctic voyagers. Breaking off the shelf-ice barriers that fringe the coast of the continent, they drift away, disintegrate and finally disappear

quent periods of calm and cold when freezing takes place. They are separated by blizzards and storms when swells break up the frozen crust into floes, which become locked together and conglomerated into ever larger and larger masses. This is the pack-ice.

In the Weddell Sea the pack-ice may be composed of enormous masses a mile or so in extent and forty or fifty feet thick. They drift with the rotary clockwise movement of the surface water and pile up against the coast of Graham Land where there is formed a mass of compacted, interlocked ice-floes pressing upon and overriding each other with irresistible pressure.

When Shackleton went south in his *Endurance* his route took him too far to the west in the Weddell Sea, so that his ship became stuck in this pressure zone among ice pushing relentlessly up against the Graham Land coast. She was overridden and crushed to matchwood. Her crew escaped with their gear and two boats onto one of the giant floes which drifted with them slowly north-east into the West Wind Drift. But as it went it began to melt, to grow smaller and to break up. At last it split beneath them and they took to their boats. In these, after enduring many hardships, they came at last to Elephant Island in the South Shetlands. Thence Shackleton and his companions made their famous journey by boat 600 miles to South Georgia to fetch help for the rest of the party whom he had left behind encamped under their boat at Elephant Island.

In many places around the Antarctic coast there are glaciers, slowly flowing rivers of ice, which move down towards the sea. Many of these float out upon the surface of the sea, with their inner borders based upon the land, so as to form those sea-borne shelves of ice known as barriers. The largest and most famous of these is the Great Ice Barrier in the Ross Sea. Amundsen and Scott trekked over it to reach the South Pole and Byrd built his miniature wooden town, Little America, upon it. It presents to the sea a perpendicular cliff of ice about 100 feet high, flat as a billiard-table on top, and 400 miles long. From this cliff to the great Beardmore Glacier, of which the Barrier is an extension and which Scott and Amundsen ascended to reach the Pole, the distance is 400 miles, a huge, gently undulating plain of ice, dead white from horizon to horizon. There cannot be a more forlorn place in the world.

In the Weddell Sea and around the coast of the continent there are other barriers of smaller extent. Like the Great Barrier they are extensions of glaciers which press upon them steadily from behind. The outer parts of these barriers are therefore tending always

to move farther and farther out upon the sea until the various strains set up in supporting so great a mass of ice on the water cause fragments to break off and float away. The fragments thus carved off are the great flat-topped, tabular icebergs which are familiar to all Antarctic voyagers. Sometimes they form huge ice islands which may reach the size of an English county. But they too drift away into the West Wind Drift where they slowly break up, roll over and assume fantastic shapes. They disappear at last in the warmer waters farther north. Some, especially those which become grounded off Antarctic islands, may last for months or even years before they melt away. Others may drift a long way north and icebergs have been recorded off the River Plate.

These Antarctic seas are the home of the great Blue and Fin whales which cruise in herds along the edge of the pack-ice during the southern summer, feeding on the shoals of a small shrimp-like creature known to the whalers as "krill". During these months the whaling factory-ships, with their attendant fleets of catchers, follow the whale herds along the line of the ice-edge. At the end of the summer, when daylight shortens and the ice begins to form again, they turn homeward, with their catchers following, each having accounted for some 1500 to 2000 whales. A proportion of the whale population, though how large a proportion is not known, moves northwards at the end of the summer to mate in warmer waters off the southern continents.

The pack-ice covers the greatest area of the southern sea at the end of the Antarctic winter, after months of formation, agglomeration and northward drift. In the spring, that is in October or November, the edge of the pack-ice is found at its farthest north. Its average northern limit is then in about latitude 56° S, but where the outflow of the Weddell Sea makes itself felt the edge of the ice may be even farther north and floes may surround the island of South Georgia, in latitude 54° S, the same latitude south as Edinburgh is north.

During the summer, until March or April, the ice melts and its northern edge retreats. About the end of February many parts of the coast of the Continent are free of ice altogether so that its grim mountains and uninviting beaches lie open to approach.

This vast body of melting ice produces at the surface of the Southern Ocean a layer of water which is more dilute, that is less salty and therefore lighter, than the water below it. This layer moves away northwards and at the same time eastwards with the West Wind Drift. To replace it a body of warmer, but

The Antarctic Ocean is by no means so lifeless as the continent which it surrounds. Seabirds and seals breed in millions on outlying islands: a penguin rookery on the shore of Macquarie Island

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In summer the whaling factory-ships, with their attendant catchers, follow the whale herds feeding along the edge of the pack-ice. (Above) *Whale-catchers belonging to several factory-ships laid up for the winter in South Georgia.* (Below) *A whale being dismembered on the deck of a factory-ship*

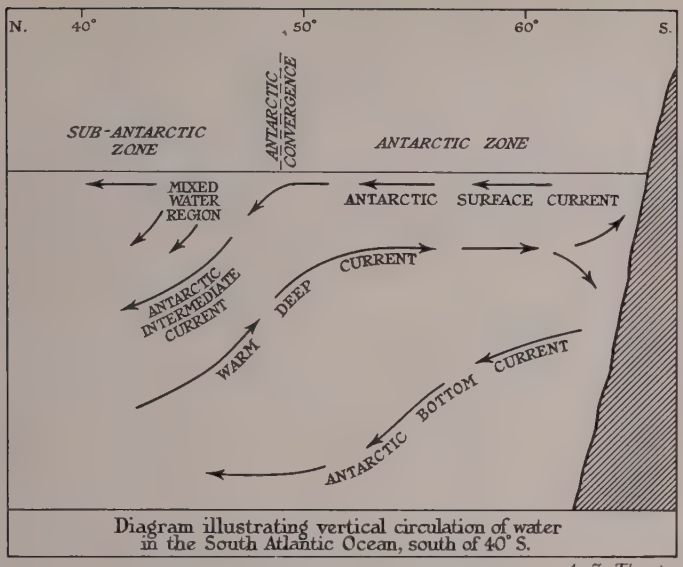


Diagram illustrating vertical circulation of water in the South Atlantic Ocean, south of 40° S.

A. J. Thornton

more salty and therefore heavier, water moves southward underneath it. This is called the Warm Deep Current. In this way a perpetual circulation is kept up in the upper strata of the Southern Ocean, and cold, dilute water moves away at the surface, to be replaced by warmer, denser water below. The mass of drifting plant and animal life, known collectively as "plankton", which is of such fundamental importance in the biology and economy of the seas, is found in the cold, northward-moving surface layer in the summer but in the winter months sinks down into the southward-moving deep layer and is thus carried back to where it came from. If this were not so there would be a continual loss at the surface and no replacement.

At great depth, 2000 fathoms or so, water cooled against the Antarctic Continent sinks and creeps north along the bottom as a huge, slow-moving mass of water known as the Antarctic Bottom Current.

The cold, dilute water at the surface of the West Wind Drift flows eastwards and northwards into the South Atlantic, the South Pacific and the South Indian Oceans until it meets with surface water which, although less dilute, is yet much warmer and therefore lighter. The water of the West Wind Drift then sinks down beneath this warmer, lighter water along a line called the Antarctic Convergence and moves northward beneath it as the Antarctic Intermediate Current. The Antarctic Convergence, although invisible and only to be detected by means of instruments, is nevertheless a barrier in the ocean, a division to the distribution of plant and animal life as pronounced and effective as a mountain chain or a desert on land. For the plant and animal population of the sea is distributed mainly along the lines of equal temperature and the Antarctic Convergence marks a sudden change in the surface temperature of the sea of as much, in places, as 5° C., as well as equally large changes in the salt content, density and chemical constitution of the water. The drifting plant and animal life, the plankton, therefore, is quite different on the two sides of this line and may change with astonishing abruptness in the course of a few hours' passage.

The Antarctic Convergence encircles the Southern Hemisphere at an average latitude of about 50° S, though there are places where it takes a turn south and others where it swings north. Having bent slightly southward before passing between Cape Horn and Graham Land, it swings north in an S-bend between the Falklands and South Georgia, to turn sharply east and then take a northerly curve where cold water streams out of the Weddell Sea. The effect of the Convergence on the spirit of man, journeying up from the everlasting grey overcast and the storms of sub-Antarctic waters, is as striking as its influence on the population of the sea. For, on crossing this invisible line, one beholds again, it may be for the first time for many weeks, the sun and the blue sky.

Surrounded by these wastes of ocean the Antarctic Continent has remained isolated since remote geological time. It has not been joined to any other land mass during the evolutionary span of the higher vertebrates. Life maintains a foothold only on its fringes, and even this marginal population is made up of seabirds and of those mammals, such as whales and seals, which are adapted to an aquatic life. No reptiles, nor terrestrial birds nor mammals, have ever crossed the intervening ocean spaces from kindlier lands, nor could they live in the Antarctic environment if they did. With its mineral wealth, if any, permanently locked beneath the ice, its naked mountains almost bare of vegetation and its climate almost intolerable except by the hardiest forms of life, the Antarctic Continent holds nothing for mankind except adventure and the challenge of the unknown. Man comes to it as a visitor only, as a hunter in pursuit of whales or seals, or as an explorer.

Sardinia's North-West

by ALAN ROSS Photographs by A. COSTA

The author's book on Sardinia, to be called The Bandit on the Billiard Table *and published by Derek Verschoyle in the late autumn, is the third of a trilogy on Mediterranean islands, the first two being* Time Was Away (*about Corsica*) *and* The Gulf of Pleasure (*Ischia and Procida*)

CICERO, in a letter to his brother Quintus, wrote: "Take care of your health, my dear brother; even though it is winter, remember that you are in Sardinia." This slur on the Sardinian climate, then only too well deserved, has been repeated in different forms by almost every visitor, from the days of the Roman Empire onward, who put pen to paper on the island. Phoenicians, Carthaginians, Romans, Vandals, Arabs, Genoese, Spaniards and now Italians have occupied Sardinia in turn, leaving a style of architecture here, a few words of dialect there, and straining their various physical characteristics from generation to generation to form the dark, liquid-eyed, courteous but extremely reserved modern Sardinian. The correspondence of the different settlers leaves no doubt that the tasks of proconsulship and colonial administration were regarded as more than usually irksome by those whose duty it was to carry them out. A series of fierce wars resulted in Sardinia changing hands with increasing rapidity, the proto-Sards, who were of Libyan origin, seeking refuge in their mountain fastnesses, but the victors ultimately left with something on their hands they didn't really want. The iron-ore, yes; the corn, perhaps; but the island, no. The main reason for this was the malaria, called *intemperie* by the Sards (a convenient generic term to cover every disease from the common cold to the pox, also a good reason for not working), which had greater effects in Sardinia than anywhere else in the Mediterranean. The Hitler war, the only one in a long line to cause the Sards any benefit, changed all that: for the Americans, who, with the British, demolished most of Cagliari prior to occupying the island, have completely eradicated the disease. Subsidized by the Rockefeller Foundation, teams of doctors and scientists worked for some years after the war doing research on anti-malarial biotics and disinfecting every single building, of whatever shape or size, with D.D.T. There is no house now that does not bear its D.D.T. labels, with date of spraying, like insignia of purity. Most of the marshland has been drained, with the result that mosquitoes are rare, and where they exist in thickly wooded areas they are free from infection. Henceforth, whoever has a hangover or a hankering for a day off work will not be able to put it down to intemperie.

The effects of this new start which has been given to Sardinia are considerable. After centuries of inertia, fever-ridden plains are being recultivated on scientific lines; forests are being planted along the flanks of the mountain ranges which occupy the greater part of the island; neglected ancient sites are being excavated and will certainly yield richly rewarding results. The Sards, throwing off their malarial fumes, have already gone some way to producing a whole string of new industries. But, most important of all, Sardinia has again become a place to which people wish to go. No towns will benefit more from this than Cagliari, the capital, and Alghero, the seaport in the north-west. For they are not only the most interesting towns to be in, but have the best beaches. Round them a tourist industry is, for the first time, being planned, and when I was there last summer the scaffolding of new hotels stalked the sea-roads like skeletons. There is every reason for the experiment to be a financial success, for Sardinia, almost unexplored by Italians, let alone by foreigners, has greater possibilities and more intrinsic character than any island in the western Mediterranean. Certainly, more than Corsica, its nearest rival; and, at the moment anyway, prices are about half as high.

Alghero, therefore, can be taken as a sample Sardinian resort of the future. Using it as a base, visitors will have easy access to the rest of the island. It is only an hour to Sassari, the island's second largest town, from which the gaunt intersecting mountains of Gallura, with the two beautiful Pisan basilicas of Saccargia and S. Pietro on rocky, remote bluffs nearby, can be conveniently reached, and in whose neighbourhood are to be found clusters of well-preserved *nuraghi*, the truncated cone-shaped forts built on rising ground by the neolithic Sard chieftains. From Sassari the

All photographs by A.

Alghero, founded in 1102, was taken from the Doria family by the Aragonese in the 14th century. Most of the walls and fortifications built by the latter are still standing and the town, a fishing port in the north-west of Sardinia, preserves its Spanish appearance. It was colonized by Catalonians and Catalan is often spoken there today

The harbour at Alghero, showing the coral and lobster boats and part of the fortified walls. Alghero, besides being a prosperous fishing centre, has excellent underwater diving sites and a wild, jagged coastline dotted with fine sandy beaches which are fringed with pines, myrtles and olives

Watching others work is a popular Sardinian pastime and benches are placed strategically along the quays to enable retired fishermen to sit in the sun and meditate while the fish are weighed and unloaded. Just off the harbour the cathedral rises out of a network of narrow cobbled streets

The roads out of Sassari dip sharply and wind in a series of elbow bends into rolling, newly reforested country. Most of Sardinia is mountainous and arid, but, encouraged by American aid and the clearing-up of malaria, fresh energies have been found to drain swamps and plant trees

Near Tempio, in the rocky Gallura mountains towards the north of Sardinia, the small village of Aggius huddles under gigantic boulders. Its houses are pink, with wrought-iron balconies, and nearly all of the inhabitants work in the vineyards that spill down from the sharp, grey skyline

The Limbara mountains have some of the best cork forests in the Mediterranean. The trunks, stripped of their bark, are a deep iodine colour and in Tempio the cork is processed in a large factory and shipped via Olbia to the mainland

Sassari is a handsome, well-laid-out town, built on a steep slope. The second largest of Sardinian cities, it has a university, good shops and hotels, and sweet, exhilarating air. The cathedral, whose Baroque façade is shown here, has been reconstructed in almost every conceivable style

If you approach Sardinia from Bonifacio in Corsica, Santa Teresa—little more than an inlet with a customs shed—is the first port of call made by the small, sleek steamer that plies daily between the two islands. The northern coast of Sardinia, off which Nelson's ships lay in wait for the French fleet in 1802-3, is forbiddingly barren

swaying Cagliari express takes just over three hours to the capital, a journey through flat, yellow plains, divided up by cactus hedges and stone walls, a glassy, uninhabited waste, rimmed with blue-shadowed mountains and very fertile.

At Alghero an airport links the town to Rome, Genoa and Marseilles, as well as Cagliari. Yet, for the traveller who wishes to go no further, Alghero has various qualities of its own. It is isolated, tucked in under the large sheltering headland that forms the north-western extremity, a mediaeval walled town whose close-packed harbours face the golden, westering sun. The outer ramparts rise steeply along the S-shaped coast, sloping away in the north to a mile of curving sand. Beach huts line the shore, a barrier between white fishermen's villas cloudy with bougainvillea, and then, behind their neat vineyards, pines reach up the foothills to where the mountains begin, cutting off Alghero from the rest of Sardinia. Within these ramparts the old centre, ringed by dilapidated towers, fortified walls and bastions, encloses a number of narrow, cobbled streets, two piazzas, a congested but good shopping area, and several scruffy alleyways opening onto the port. East of the town, on the Sassari road, gardens and trees, with *carrozzas* standing in their shade, spill out in front of a modern, pink-washed building estate.

The town, seen from the sea, looks both mediaeval and Spanish. The ruined buttresses of the Aragonese rise above the harbour walls, and domes and the Gothic spires of the numerous churches built during the long Spanish occupation dominate the peeling, pitted houses that face in all directions beneath them. Alghero, whose name comes from the Latin *alga*, meaning seaweed—great velvety streamers of which crackle in thick heaps over the sand and rocks—unlike most Sardinian towns, is not very clean and the nearer you get to the shore the less enticing does it seem. Doubtless, when money begins to trickle in and the inhabitants, who have no restaurants, no bars, no music at present, become more accustomed to its charms, these things will be taken greater care of.

But, at present, Alghero is essentially a large fishing village whose life is centred round the port. The main fishing is for coral, lobster, *dentice* and sardine, and early any morning you can see the orange-and-blue boats, with decorated bows, sailing in out of the dawn. The fish, especially the sardines, are often bought straight from the boat and you can watch them flashing like coins as they are weighed on brass scales in the holds and carried away by waiting housewives. The coral is fished eight or nine miles out, hoisted up on nets hung round wooden crosses from a depth of about seventy fathoms. In harbour, these nets, draped on the masts to dry, look like pale acacias.

When the town was in Aragonese hands, Catalan colonists were sent over to Alghero and their language is still spoken. The Sardinians, driven successively further inland by invaders, are poor fishermen and it is noticeable that the best fishing ports are Carloforte, in the south-west, where the inhabitants are descended from the Genoese, and Alghero where Spain has left its mark both on faces and on character. While neither the cathedral, frequently restored in Spanish Gothic since its foundation in the 14th century, nor any of the various palaces and public buildings are very distinguished, the streets off the port have great charm. For a series of arches links the pink-washed houses, whose wrought-iron balconies nearly touch across the thin streets, and looking up you get sudden glimpses of beautifully curved white stone, angles of roof and cornice, against blue Mediterranean sky. During the day washing, in rinsed pastel shades, hangs like huge flags between the houses, giving an air of perpetual *festa*.

The coastline on either side is steep, rocky and barren, with numerous grottoes of great local fame. Addicts of underwater fishing and exploration find the cliffs off Capo Caccia to the north one of the best sites of their kind.

Inland, the country is, for a while, neatly cultivated with olives, artichokes (from which a Sardinian liqueur is made) and tobacco—but a few miles beyond, the land rises sharply. Humps of dry soil, ringed round with myrtle near the crown like monks' tonsures, stick up from twisting ravines and canyons, and the road zig-zags under overhanging boulders through a bare landscape, very mountainous, with patches of thyme, cactus and wild fennel in the valleys. This is the characteristic Sardinian interior, hard, lonely, arid, but not without a particular beauty of contrast—that only lets up in the diagonal Campidano plain north of Cagliari, where for fifty miles or so vines and olive flourish in the one green strip on the map.

Alghero, however, has perhaps the next most fertile area lying behind its beaches. If the expected tourists fail to arrive for one reason or another, it will still be able to work its way, in the modest Sardinian manner, better than most.

The Last of the *Great Britain*

by L. HARRISON MATTHEWS

The odd corners of out-of-the-way harbours in the southern oceans hold many relics of the shipping of former days. The author, now Director of the Zoological Society of London, tells of an incident he experienced many years ago while serving on the scientific staff of the Discovery *expedition*

We had been out to Yorke Bay a few miles from Port Stanley in the Falkland Islands to see the rookery of Jackass Penguins, my companion a Falkland-born settler, a true "kelper". A blustering wind and heavy rain squalls had made our tramp anything but easy, but a break in the clouds had given us a little sunshine to see the birds in comfort and to take some photographs.

Then the rain came on again, so we started the long tramp back to Stanley over the sands and moors. We paused on the hilltop before we went down to the head of Whale Cove and, looking back across Port William, we saw in the gaps between the drifting showers a line of figures walking over the moor beyond an inlet on the far shore.

"What on earth's going on over there?" I asked.

"Them above Sparrow Cove? That's the Gentoos. You ought to take a look at them sometime. Gentoo Penguins by the hundred. They're not so wild as Jackasses."

"But they're not on the beach, they're walking over the camp."

"Ah," replied the kelper, "their rookery's a mile from the sea. Come on, this wind's cool."

We ploughed on, the water streaming from our sou'westers and oilies, and dripping from nose and chin—the going was rough, and we had little to say until we struck the end of the track leading to Stanley's main street. At last it was firmer underfoot, and the kelper stopped to fish out his makings and roll a cigarette.

"Don't mind if I do," I said, using the local idiom, when he offered me his pouch and packet of papers as he fumbled for a match.

The rain had eased a little; we lit up and set off along the rough road, the hulks in Stanley harbour before us catching a ray of the setting sun that broke through a hole in the low scudding clouds. There was quite a fleet; but no busy activity about it, for all these ships, once the pride of their skippers as they raced the ocean swells under a press of sail, were cripples condemned to rot on moorings, never again to have the freedom of the sea. All had limped into port damaged in gales off the Horn—a port of little comfort, for the charges asked by the island shipwrights were so ruinous that the splendid old ships were abandoned to the underwriters, condemned, and sold for a song to the people whose grasping greed had been their death-warrants. The largest of them lay in the middle of the harbour, the famous *Great Britain*, cut down to a hulk and used as a warehouse for wool.

When we reached the Ship Inn we called for beer—pints of special Burton export. Several kelpers were sitting round the fire, including the skipper of the *Penguin*, a little steam-launch used by the harbour master as a runabout. They wanted to know where we had been and what we had done, and guessed that I was more than a little cracked to go all that way on foot to see a crowd of penguins.

"If you want to see penguins," the skipper said, "you'd better come with us tomorrow. I'm taking the boss over to Sparrow Cove in the forenoon, he's going to see if he can pipe the water from the springs over there."

"Don't mind if I do," I replied.

In those days, twenty-five years ago, Stanley had no water-supply beyond rain collected from the roofs whose ridges were the favourite perches for flocks of gulls and shags.

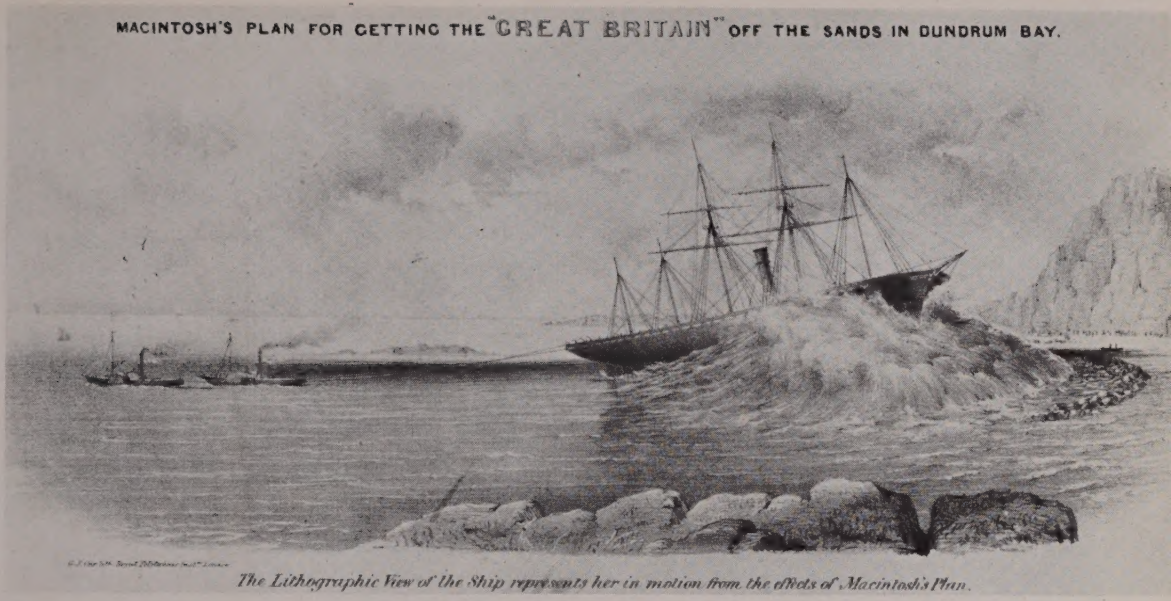
Just before the *Penguin* cast off from the government jetty next day the "Buccaneer" came alongside and asked if he could go with us; he tied his punt to the jetty and hopped aboard as the ropes were let go. It was a cold day and blowing hard but he was hatless and his legs and feet were bare; he was clad only in shorts, a shirt open at the neck, and an old tweed jacket. He was a tough wiry man, his weatherbeaten features deeply tanned, and his grizzled beard trimmed to a Captain Kettle point; his Falkland nickname well fitted his looks. He was owner and skipper of a fifteen-ton yawl-rigged yacht that was lying in the harbour on her way back to Ireland from a voyage round the world; with his crew of two he reached home at last, having brought his little ship safely across three oceans.

We steamed past the hulk of a three-master,

All pictures but one from the National Maritime Museum

(Above) *The* Great Britain, *lying in the floating harbour at Bristol after fitting out. Launched by Prince Albert at Bristol in 1843, she was the first steamship built of iron and with a screw propeller. Her length from figurehead to taffrail was 322 feet and the iron in her hull and engines weighed over 1500 tons.* (Below) *A photograph taken about the same time by Fox-Talbot, the pioneer of photography*

(Above) *In the Atlantic: an aquatint of 1845. Comparison with the Fox-Talbot photograph shows this to be an accurate portrait of her early days.* (Below) *Off Sandy Hook, New York: a lithograph of 1852 by Currier. It is not certain that she ever had two funnels—her rig was altered after stranding*



Having gone aground in Dundrum Bay, Ireland, in 1846, the Great Britain *remained fast for eleven months. This lithograph is from a scheme—one of many—for getting her off. Its author, John Macintosh, suggested raising a huge artificial wave by exploding "suitable powder" against a stone embankment at her bow "upon which the Ship is carried from her position and placed in deep water"*

the *Elizabeth*, and went alongside the *Great Britain* where a rickety gangway hung down her port side.

"Visit of inspection," said the harbour master, "just to see she ain't going to sink on us yet. Come aboard."

The *Great Britain* was built at Bristol between 1837 and 1843 and when she was launched she was the largest ship afloat—2984 tons—the first steamer built of iron, and the first of any size to have a screw propeller. She was originally rigged as a six-masted schooner, and was put into the transatlantic service; she got ashore in Dundrum Bay in 1846 and lay stranded for eleven months. After she was refloated her engines were taken out and she was converted to a three-masted ship, and ran for many years in the Australian trade. And now she is no longer afloat, for within recent years she has been put on the beach in Sparrow Cove lest she should sink at her moorings.

Before we went aboard we put the punt out and sculled the engineer along her waterline; he used a four-pound hammer to tap her hull, knocking great flakes of rust and corrosion from her wrought-iron plates and digging deep below the surface. But wherever he tried he came to metal in the end, and it sounded solid enough. The ship's sides were covered with a wood sheathing in a wide band above and below her loaded waterline, so that it was only towards stem and stern that the sheer of it let the engineer get at the iron skin underneath; amidships it came round the turn of her bilge and dipped below the surface. Underwater the hull was covered with a thick coat of large mussels and a thousand other kinds of sea growths: barnacles, shells, sponges, anemones and clumps of sea-squirts like great bunches of tripe.

"I guess it's only the mussels that hold her together," said the engineer, "but she'll float a bit longer yet. Let's have a look inside."

We pulled back to the *Penguin* and hove in the punt.

"Only two at a time or you'll fetch it adrift," called the engineer as we started up the half-rotten accommodation ladder, its foot dangling from a rusty davit.

The tumble-home of the ship's topsides was tremendous, and the edge of the ladder scraped off chunks of rust as it swayed and rubbed against the hull under our tread, sending a shower of scales plopping into the water astern of the *Penguin*.

The muddle on deck was shocking—everything dropping to bits, and her splendid wide decks cluttered up with planks, shifting-boards and improvised shanties. She was stripped to her lower masts and bowsprit, her stays and shrouds still standing, the latter with ragged ratlines here and there. The main-

A water-colour of 1882 showing the Great Britain *cut down to a three-masted sailing ship, with the masts as they still are. She is seen fitting out with top-gallants and royal poles sent down, but the artist has taken liberties with her painted gun-ports, which are shown incorrectly as real ones*

Author

The hulk of the Great Britain *as she lay in 1926, in Port Stanley harbour, Falkland Islands, where she was used as a floating warehouse for storing wool. She later became so leaky that she had to be beached in Sparrow Cove to prevent her sinking at her moorings, and still is there today*

yard, her only spar, was crossed, with foot-ropes, flemish horses, and jackstay rigged, and a jill fixed at one yard-arm for a crane. Her masts were massive sticks, built up of many baulks bound with hoops of iron every two feet; lines of broken rigging dangled from her tops and bowsprit and swung mournfully in the breeze—her open rail of stanchions with a teak top was standing on her starboard side with only a few gaps, but it was completely gone to port. The only thing that showed she still had some work to do was a donkey engine in a large shed at the foot of the mainmast, used for working the jill to get the bales of wool in and out of her for storage or shipment.

"I wonder who rove those lanyards, and when?" I said to the skipper as we stood by the fore dead-eyes—her short chain plates were inside the rail—my hand resting on the bleached serving of a shroud eyesplice.

"Some rigger who's finished work a while back. I guess she's seen some rough times," he replied.

"Aye, and some good ones—fine nights in the Trades, or making the land on a bright morning with a good fresh breeze."

"Ah, leaving Liverpool on a wet day, full of emigrants; she must have been a ship-load of misery then."

"You only see the gloomy side."

"Aye, romance of sail! There weren't no romance for the fo'c'sle hands I can tell you—hard work, bad grub, bad quarters, bad clothes and bad pay. It was a dog's life—I've had some. Starvation forced 'em to sea; hand, reef and steer, that was an A.B.'s job," said the skipper, spitting over the side, "and his only comforts when he got ashore was rum, women and baccy," he added, using one of the five unprintable monosyllables.

Nearly all the deck fittings were gone, but the cabin companion was left on the long stretch of her wide quarter-deck. The varnish had long since peeled off its bleached teak, and all but three of the brass rods protecting the plate-glass lights at the sides were missing—and the three were bent and black. The doors on the fore-end were in place, with their brass hinges and lock; the engineer opened them with a brass key and the others went below, ducking their heads under its rounded top when they stepped onto the top tread of the stair.

I was left alone on deck, and but for the chilly breeze and gloomy sky, could have been back in one of those pictures of Tissot's painted in the seventies. The teak companion, a bearded captain sitting beside it having a last talk with a top-hatted owner over a glass of wine from a cut-glass decanter on a mahogany three-legged table; the mate in his monkey-jacket chatting with the bustled ladies on teak *chaises-longues* covered with fur rugs and silk cushions, while the demure little girl and the nurse in black look timidly under their bonnets at the sailors working aloft; the snowy deck with its black seams, and all around in the river a jam of clippers, a smart strake of gunports painted along their sides, and their masts and yard-arms white. Peace, prosperity and elegance; what delicious nostalgia Tissot put into those pictures—but he never painted the inside of the fo'c'sle.

"You in a trance?" said the engineer putting his head out of the companion. "We're finished, you'd better hop down quick if you want to see below."

I hopped; but there was little to see, for all her accommodation had been ripped out to make her into a warehouse.

The *Penguin* cast off and steamed round under the *Great Britain*'s bow for Sparrow Cove, the gaunt bowsprit pointing its cap aloft far above us and a shag sitting framed in the ring. Below it some paint still showed on her figurehead, an oval shield bearing the Union Jack, and some gilding clung to the carved scroll-work round it and on the head board. From each hawse-pipe an enormous stud link chain joined a swivel at the top end of her rusty mooring, above which the broken end of a martingale guy swayed to and fro, mocking her senile futility. She was soon out of sight as we went through the Narrows into Port William.

"I suppose we'll have to make the old *Britain* into a jetty before long," the engineer said. "She won't be safe afloat many years more. Have you seen that old hulk making the end of the jetty by Sullivan House?"

"The wooden ship with the quarter galleries?" I said.

"Aye, she's about the oldest thing in Stanley —an old East Indiaman. Once belonged to the Honourable Company."

"She looks it. Where did that whaler come from that was tied to the town jetty the other day?"

"Out of a whale-ship sometime I suppose. Been knocking around a long time."

I had noticed the boat several times—a real old Moby Dick hand-harpoon whale-boat that must have belonged to one of the old sailing whale-ships. She was in very good condition, and looked ready to be lowered for Sperm any time; her loggerhead and clumsy cleat were still in place, as were the mast step and the notch for the steering oar.

The skipper went below when we spoke of the whale-boat, and rejoined us with a couple of long metal cylinders in his hand.

"Know what this is?" he asked, offering me one.

It was a little less than two feet long and about an inch and a quarter in diameter, the fore end brought to a very sharp point with three facets like a surgical needle. The last eight inches were less in diameter, and carried three india-rubber webs wrapped round it so that they made the diameter about the same as that of the fore part; the extreme end bore a leather washer and an iron screw with a small hole through it. It was evidently a dart to be fired from a gun—the rubber feathers let it be pushed down the barrel, and then sprang out at right angles to make it fly straight when it was fired.

"Well, I've never seen one before," I said, "but it's a bomb-lance."

"Aye, you've guessed right. See that little hole at the end? That's the fuse—make it explode inside the whale."

"Must have made the gun kick like a mule, shooting that," I said. "Where did you get it?"

"I guess it did, but they had a big rubber pad on the butt. We found those and several more sculling round the bilges in one of the hulks."

I turned over the hardened and perished rubber feathers, and between them was a small yellow label, partly torn away :

. . . LAND'S
. . . omb Lance.
. . . atented June 22d, 1852

"Why, that's Holland and Holland, the gunsmiths—I didn't know they went in for artillery," said the engineer. "That would make a mess of a whale's innerds if it exploded inside him. Still, it's nothing to what they use nowadays."

"No," replied the Buccaneer. "But this was for Sperm and Right whales; the Blue and Fin whales they catch now are a lot bigger."

"Let go!" sung out the skipper, ringing the engines astern as we glided towards the head of Sparrow Cove on the far shore of Port William. We put the punt over and all went ashore to see the Gentoo Penguins.